

TC-K415/K515S

SERVICE MANUAL

AEP Model
UK Model
TC-K415/K515S

Australian Model
TC-K415

- TC-K415/K515S are almost same as the model TC-K411/K511S previously issued. Therefore, Refer to the TC-K411/K511S service manual for the information not contained in this service manual.

NOTE :

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Difference Parts

| | TC-K411/K511S | TC-K415/K515S |
|-------------------------------|---------------|---------------|
| Tape Transport Mechanism Type | TCM-190VB11 | TCM-190VB14 |

TC-K415/K515S

| Page | Ref.No | Part No. | Description |
|------|--------|--------------|--|
| 28 | * 4 | A-2007-009-A | MAIN BOARD, COMPLETE (K511S/K515S : AEP,G) |
| | * 4 | A-2007-226-A | MAIN BOARD, COMPLETE (K511S/K515S : UK) |
| | * 4 | A-2007-122-A | MAIN BOARD, COMPLETE (K415) |
| | 9 | 3-901-525-01 | PANEL, BACK (K415 : UK) |
| | 9 | 3-901-525-11 | PANEL, BACK (K415 : AEP,G) |
| | 9 | 3-901-525-21 | PANEL, BACK (K415 : AUS) |
| | 9 | 3-911-452-01 | PANEL, BACK (K515S : UK) |
| | 9 | 3-911-452-11 | PANEL, BACK (K515S : AEP,G) |
| | * 13 | A-2006-954-A | DOLBY (S) BOARD, COMPLETE (K515S) |
| | * CN1 | 1-537-473-11 | TERMINAL (LEAD PIN)(K515S) |
| 29 | 56 | X-3367-875-1 | LID ASSY, CASSETTE (K415) |
| | 56 | X-3368-044-1 | LID ASSY, CASSETTE (K515S) |
| | 57 | X-3367-874-1 | PANEL ASSY, FRONT (K415) |
| | 57 | X-3368-045-1 | PANEL ASSY, FRONT (K515S) |
| | 63 | A-2007-010-A | PANEL BOARD, COMPLETE (K515S) |
| | 63 | A-2007-121-A | PANEL BOARD, COMPLETE (K415) |
| | 68 | A-2004-357-A | HOLDER (R) ASSY, CASSETTE (K415) |

| Page | Ref.No | Part No. | Description |
|------|--------|--------------|---|
| 29 | 68 | X-3368-119-1 | HOLDER (R) ASSY, CASSETTE (K515S) |
| 30 | 101 | 3-911-014-01 | SPRING, TORSION (K415/K515S) |
| | 114 | X-3368-368-1 | FLYWHEEL (FWD) ASSY (K415/K515S) |
| | M2 | X-3368-855-1 | MOTOR ASSY, CAPSTAN (K415/K515S) |
| 31 | 151 | X-3368-718-1 | CHASSIS (ONE) ASSY, MECHANICAL (K415/K515S) |

ACCESSORIES & PACKING MATERIALS

| | |
|----------------|---|
| 3-758-600-11 | MANUAL, INSTRUCTION (K415/K515S : AEP) (ENGLISH,FRENCH,SPANISH,PORTUGUESE) |
| 3-758-600-41 | MANUAL, INSTRUCTION (K415/K515S : AEP) (GERMAN,DUTCH,SWEDISH,ITALIAN) |
| 3-758-600-51 | MANUAL, INSTRUCTION (K415/K515S : G) (GERMAN) |
| 3-758-600-61 | MANUAL, INSTRUCTION (K415/K515S : UK, AUS) (ENGLISH) |
| * 3-912-543-01 | INDIVIDUAL CARTON (K415 : AUS) |
| * 3-912-543-11 | INDIVIDUAL CARTON (K415 : AEP, UK, G) |
| * 3-913-835-11 | INDIVIDUAL CARTON (K515S) |

[AUS : Australian model
G : German model]

STEREO CASSETTE DECK
SONY®

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

9-959-477-11

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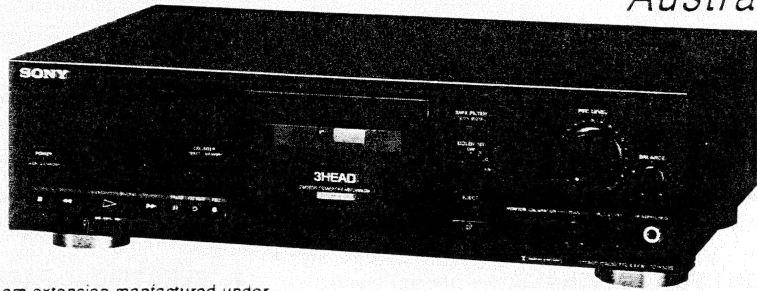
Published by Home A&V Products Div. Quality Engineering Dept.

RAG

TC-K411/K511S

SERVICE MANUAL

6790
AEP Model
UK Model
Australian Model



• Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.


DOLBY, the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

PHOTO : TC-K511S

| | |
|------------------------------------|-------------|
| Model Name Using Similar Mechanism | TC-K490 |
| Tape Transport Mechanism Type | TCM-190VB11 |

SPECIFICATIONS

Recording system 4-track 2-channel stereo
Fast winding time Approx. 90 sec. (with Sony C-60 cassette)
Bias AC bias
Heads Erasing head x 1 (S&F head)
Recording head x 1 (SD head)
Playback head x 1 (SD head)
Motors Capstan motor x 1 (DC servo motor)
Reel motor x 1 (DC motor)
Signal-to-noise ratio (at peak level and weighted)

| Cassette (Dolby NR off) | Type IV | Type II | Type I |
|-------------------------|---------|---------|--------|
| | 60 dB | 59 dB | 57 dB |

S/N ratio improvement (approximate values).
With Dolby B NR on: 5 dB at 1 kHz; 10 dB at 5 kHz
With Dolby C NR on: 15 dB at 500 Hz; 20 dB at 1 kHz
With Dolby S NR on: 10 dB at 100 Hz; 24 dB at 1 kHz (TC-K511S only)

Harmonic distortion 0.4% (with Type I, 160 nWb/m 315 Hz, 3rd H.D.)
1.5% (with Type IV, 250 nWb/m 315 Hz, 3rd H.D.)

Frequency response (DOLBY NR off)

| | |
|------------------|--|
| Type IV cassette | 30 - 19,000 Hz (±3 dB, IEC) 30 - 16,000 Hz [±3 dB (-4dB recording)] |
| Type II cassette | 30 - 18,000 Hz (±3 dB, IEC) |
| Type I cassette | 30 - 17,000 Hz (±3 dB, IEC) |

Type IV : Sony METAL-S
Type II : Sony UX-S
Type I : Sony HF-S

Wow and flutter ± 0.13% W.Peak (IEC)
0.07% W.RMS (NAB)
± 0.18% W.Peak (DIN)

Inputs

| | | |
|---------------------------|-----------------|-----------|
| Line inputs (phono jacks) | Sensitivity | 0.16 V |
| | Input impedance | 47 k ohms |

Outputs

| | | |
|--------------------------------|--------------------|--|
| Line outputs (phono jacks) | Rated output level | 0.5 V at a load impedance of 47 k ohms |
| | Load impedance | Over 10 k ohms |
| Headphones (stereo phone jack) | Output level | 1 mW at a load impedance of 32 ohms |

General

Power requirements AEP, Germany Model : 220-230V AC, 50/60 Hz
UK, Australian Model : 240V AC, 50/60 Hz
Power consumption 23 W
Dimensions Approx. 430 x 123 x 310 mm (w/h/d)
(17 x 4 7/8 x 12 1/4 inches)
including projecting parts and controls
Mass Approx. 4 kg (8 lbs 14 oz)

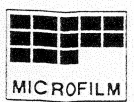
Supplied accessories
Optional accessory

Audio connecting cords (2)
Wireless remote control unit RM-J01

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

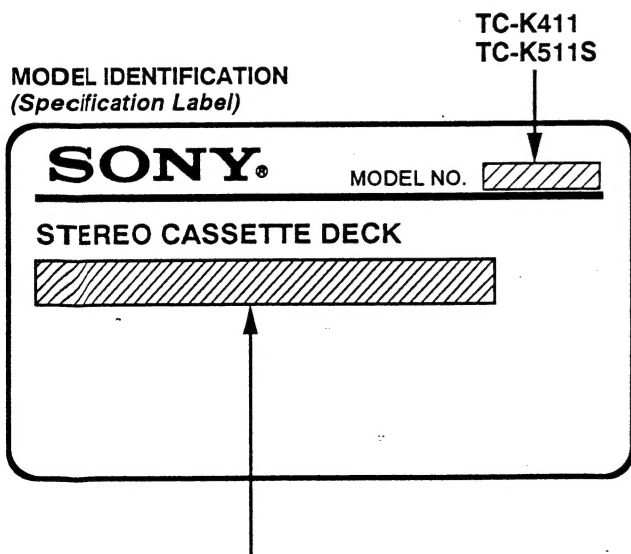


STEREO CASSETTE DECK
SONY®

6790

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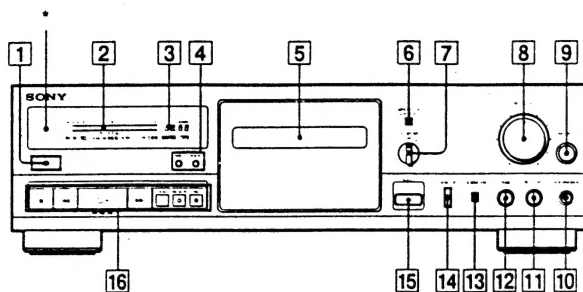
AEP, Germany model : AC 220-230V ~50/60Hz
 UK, Australian model : AC 240V~50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

1-1. IDENTIFYING THE PARTS



This section is extracted from instruction manual.



Front Panel

For details, refer to the page number(s) indicated in parentheses.

- 1 POWER switch
- 2 Peak level meter
- 3 Linear counter
- 4 COUNTER buttons
RESET button
MEMORY button
- 5 Cassette holder
- 6 MPX FILTER button
- 7 DOLBY NR (noise reduction) switch
- 8 REC (recording) LEVEL control
- 9 BALANCE control
- 10 HEADPHONES jack (stereo phone jack)
- 11 REC (recording) LEVEL control for calibration
- 12 BIAS control
- 13 CALIBRATION button
- 14 MONITOR button
- 15 ▲ (eject) button
- 16 Tape operation buttons
■ (stop) button
◀◀ (rewind) button
▶▶ (play) button
▶▶ (fast-forward) button
|| PAUSE button
○ REC MUTE (record muting) button
● REC (recording) button

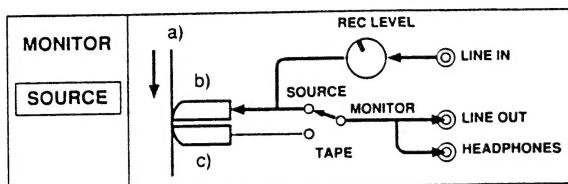
* Remote control sensor

You can remotely control this cassette deck with:

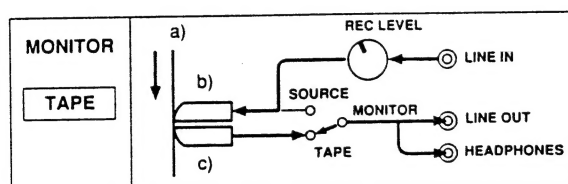
- A remote commander that came with a Sony amplifier or receiver if it has the  mark and cassette deck control capability.
- An optional Sony remote commander with the  mark and cassette deck control capability.

1-2. RECORDING

A



B



Monitoring the Recorded Sound

As this unit has three separate heads for recording, playback and erasure, you can check the quality of a recorded sound by comparing it with the input source signal.

To listen to the input source signal, press the MONITOR button to turn on the SOURCE indicator.

(Fig. A)

To listen to the sound recorded on the tape, press the MONITOR button to turn on the TAPE indicator. (Fig. B)

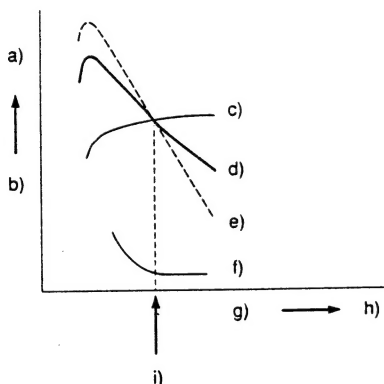
Fig. A and B show the MONITOR switch setting and their respective signal flow.

- a) Band
- b) Recording head
- c) Playback head

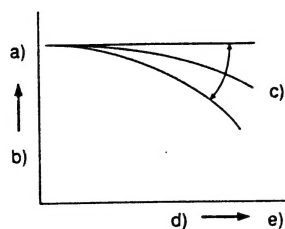
Comparing the recorded sound with the sound source

While recording, use this monitoring function to check that there is no distortion due to excessive level settings or sound degradation due to head contamination.

A



B



What Is the Dolby HX PRO System?

The Dolby HX PRO system provides improved linearity in high-range frequency response during recording. Tapes recorded with this system retain the same high quality even when played back on other tape decks.

As shown in Fig. A, characteristics such as output level and distortion differ widely according to the bias (high-frequency) current.

Fig. A

- a) High
- b) Distortion output
- c) 315 Hz
- d) 6.3 kHz
- e) 10 kHz
- f) 315 Hz distortion
- g) Bias current
- h) High
- i) Established bias current

In conventional systems (see Fig. B), the bias current is susceptible to variations in certain recording signals which may cause fluctuations in frequency response, distortion, or other unwanted characteristics.

Fig. B

- a) High
- b) Output
- c) Fluctuation
- d) Frequency
- e) High

With the Dolby HX PRO system, the effective bias amount added to the bias current is controlled in millisecond units to greatly reduce distortion, improving linearity in high-range response and ensuring high-intensity recording with minimal distortion and noise.

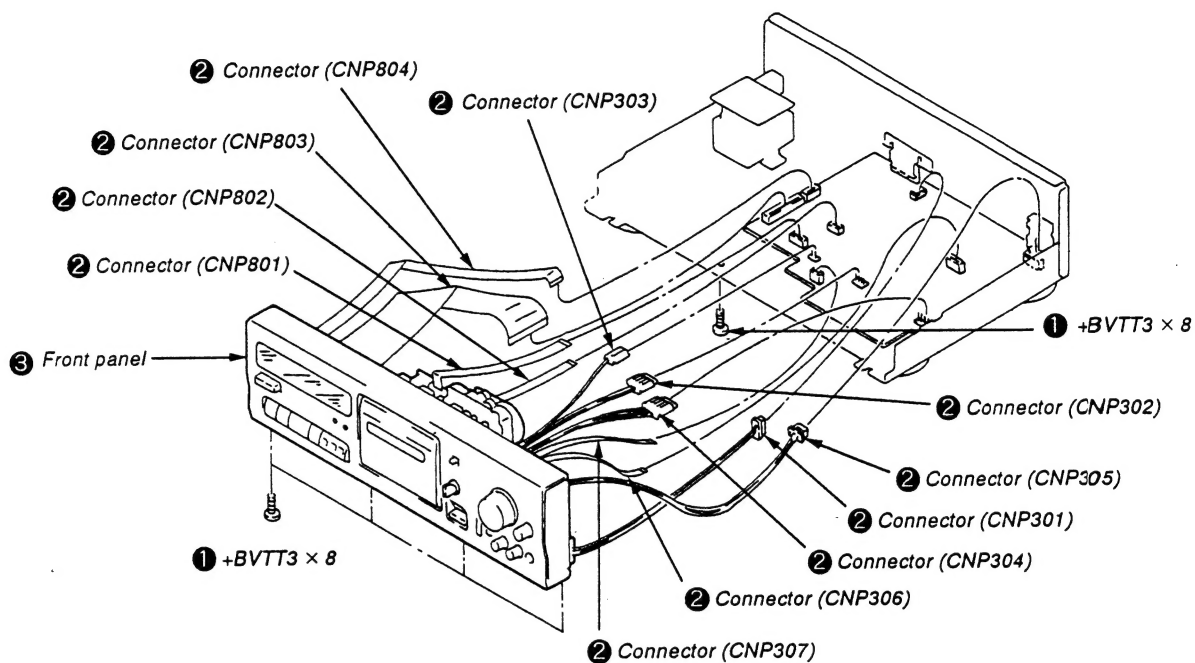
SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

CASE

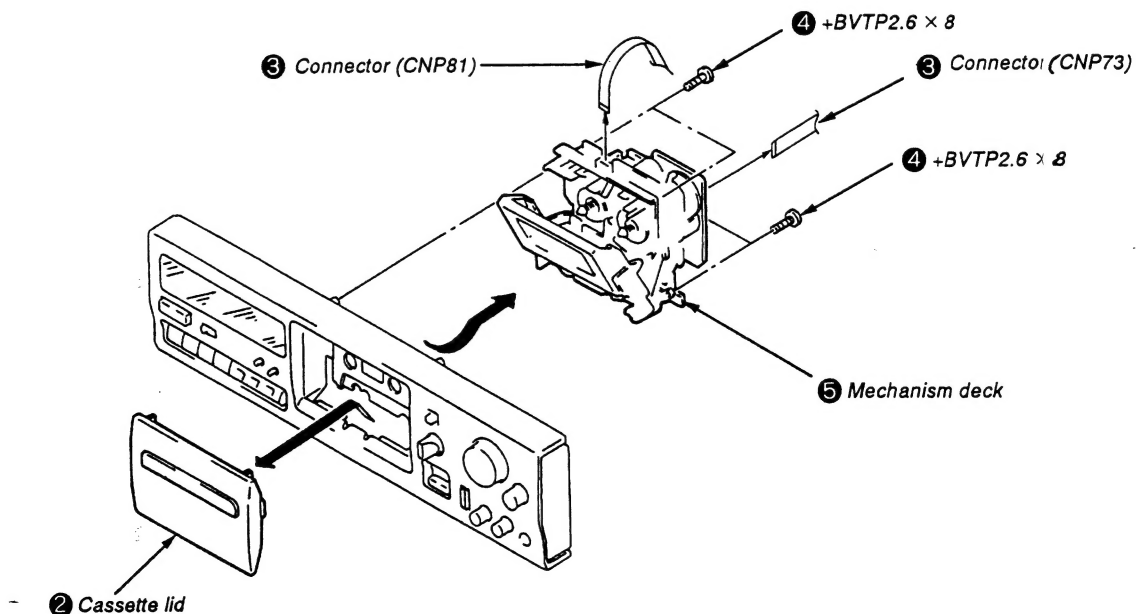
Unscrew the four case attachment screws M3 × 8 and remove the case.

2-1. FRONT PANEL

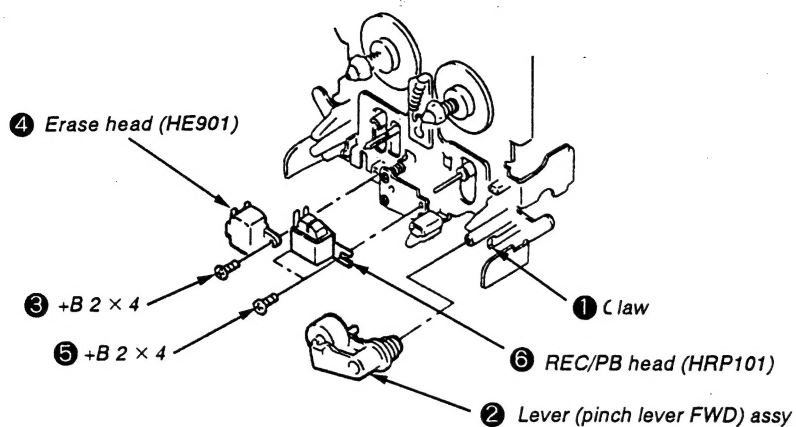


2-2. MECHANISM DECK

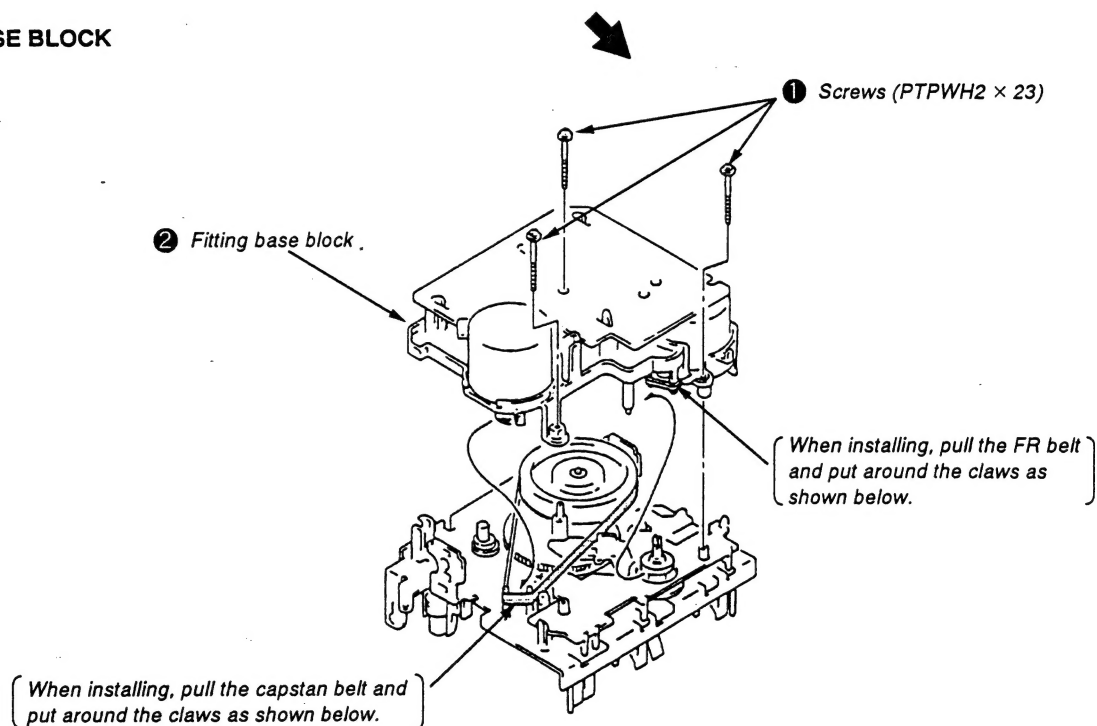
1 Press the eject button.



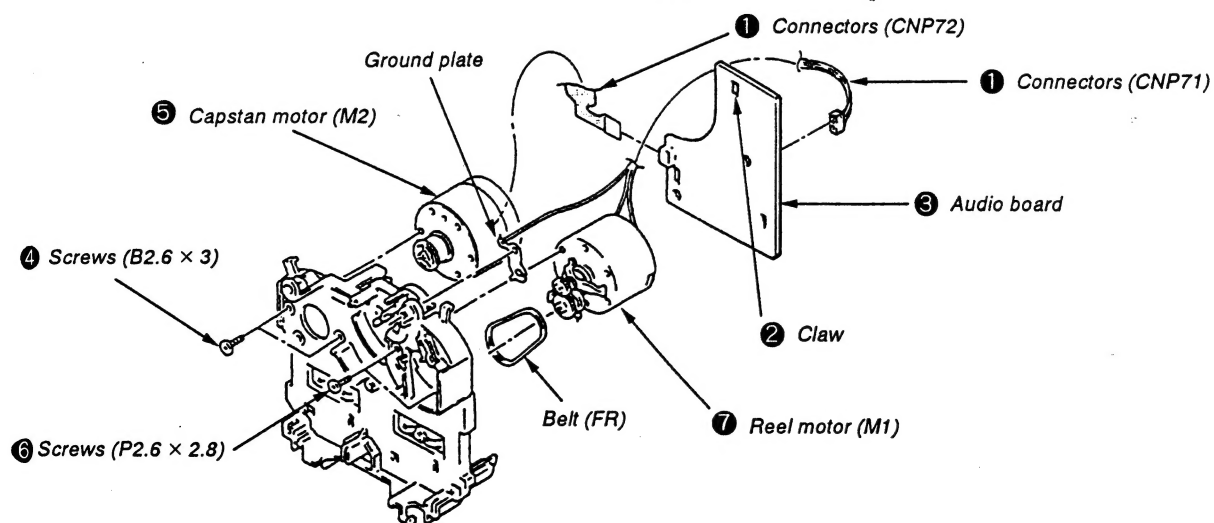
2-3. HEAD



2-4. FITTING BASE BLOCK



2-5. MOTOR



SECTION 3 EXPLANATION OF IC TERMINALS

IC801 CXP82316-018Q

| Pin No. | Pin name | I/O | Description |
|---------|----------------|-----|--|
| 1 | TMSW | I | Test mode selector. "H" : Normal "L" : Test mode |
| 2 | SIRCS | I | Sircs signal input terminal. |
| 3 | NC | — | Not used. |
| 4 | NC | — | Not used. |
| 5 | NC | — | Not used. |
| 6 | SOURSE | I | Sourse select terminal. |
| 7 | POWER-OUT | O | Power ON/OFF. |
| 8 | POWER-IN | I | Power OFF. OFF = 0V |
| 9 | ON/OFF CAL1 | I | Calibration ON/OFF control terminal. |
| 10 | H/L CAL2 | I | Calibration H/L control terminal. |
| 11 | DOLBY • ON/OFF | O | Dolby ON/OFF control terminal. |
| 12 | DOLBY • B/C | O | Dolby B/C control terminal. |
| 13 | NC | — | Not used. |
| 14 | REC MUTE | O | REC out mute Terminal |
| 15 | LINE MUTE | O | Line mute ON/OFF terminal. |
| 16 | REEL — | O | Reel motor — output terminal. |
| 17 | REEL + | O | Reel motor + output terminal. |
| 18 | C • M | O | Capstan motor. ON/OFF, ON = 0V |
| 19 | TYPE IV | I | Type IV SW input terminal. |
| 20 | TYPE II | I | Type II SW input terminal. |
| 21 | BIAS | O | Bias ON/OFF. ON=0V |
| 22 | METER-L | I | Meter level L-CH input terminal. |
| 23 | METER-R | I | Meter level R-CH input terminal. |
| 24 | HALF SW | I | Half pawl input terminal. |
| 25 | T • PULSE | I | Take up pulse input terminal. |
| 26 | S • PULSE | I | Supply pulse input terminal. |
| 27 | DOLBY | I | Dolby SW input terminal. OFF = 0V |
| 28 | KEY 1 | I | Key input terminal. |
| 29 | KEY 2 | I | Key input terminal. |
| 30 | RESET | I | Reset terminal. Reset : 0V |
| 31 | EXTAL | O | System clock input terminal. |
| 32 | XTAL | I | System clock output terminal. |
| 33 | Vss | — | Power supply (GND) |
| 34 | S • REC • SEL | O | S • Record select terminal. |
| 35 | PB | O | Playback selector for dolby IC Select. |
| 36 | PB-S | O | Playback selector for dolby S IC select. |
| 37 | P1 | O | VFD Segment. |
| 38 | P2 | O | VFD Segment. |
| 39 | P6 | O | VFD Segment. |
| 40 | P7 | O | VFD Segment. |

| Pin No. | Pin name | I/O | Description |
|---------|-----------------|-----|---|
| 41 | P3 | O | VFD Segment. |
| 42 | P5 | O | VFD Segment. |
| 43 | P4 | O | VFD Segment. |
| 44 | P8 | O | VFD Segment. |
| 45 | P16 | O | VFD Segment. |
| 46 | P9 | O | VFD Segment. |
| 47 | P10 | O | VFD Segment. |
| 48 | P14 | O | VFD Segment. |
| 49 | P15 | O | VFD Segment. |
| 50 | P11 | O | VFD Segment. |
| 51 | P13 | O | VFD Segment. |
| 52 | P12 | O | VFD Segment. |
| 53 | P27 | O | VFD Segment. |
| 54 | P18 | O | VFD Segment. |
| 55 | P19 | O | VFD Segment. |
| 56 | P20 | O | VFD Segment. |
| 57 | P25 | O | VFD Segment. |
| 58 | P21 | O | VFD Segment. |
| 59 | P22 | O | VFD Segment. |
| 60 | P23 | O | VFD Segment. |
| 61 | P24 | O | VFD Segment. |
| 62 | P28 | O | VFD Segment. |
| 63 | NC | — | Not used. |
| 64 | NC | — | Not used. |
| 65 | NC | — | Not used. |
| 66 | G5-MODE | O | VFD Grid. |
| 67 | G4-SEC | O | VFD Grid. |
| 68 | G3-MIN | O | VFD Grid. |
| 69 | G2-RCH | O | VFD Grid. |
| 70 | G1-LCH | O | VFD Grid. |
| 71 | — 21V | — | — 21V. |
| 72 | V _{DD} | — | Power supply (+5V) |
| 73 | — | — | In normal operation, connect to V _{DD} . |
| 74 | NC | — | Not used. |
| 75 | NC | — | Not used. |
| 76 | NC | — | Not used. |
| 77 | FILTER | O | LPF Filter control output terminal. |
| 78 | NC | — | Not used. |
| 79 | STOP SW | I | Mechanism stop switch input terminal. |
| 80 | AMS-SIG | I | AMS Signal input terminal. |

SECTION 4 ADJUSTMENTS

4-1. MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured alcohol-moistened swab:

| | |
|----------------------------|--------------|
| record/playback/erase head | pinch roller |
| rubber belts | capstan |
| idlers | |
- Demagnetize the record/playback head with a head demagnetizer. (Head demagnetizer do not approach for the erase head.)
- Do not use a magnetized screwdriver for the adjustment.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

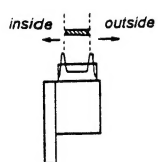
| Torque | Torque | Meter reading |
|----------------------------|---------|---|
| Forward | CQ-102C | 30 to 65g·cm (0.42 to 0.90oz·inch) |
| Forward back tension | CQ-102C | 1 to 6g·cm (0.014 to 0.08 oz·inch) |
| FF/REW | CQ-201B | 70 to 120g·cm (0.98 to 1.66 oz·inch) |

Record/Playback Head Height/Declination Adjustment Procedures :

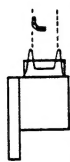
- Test cassette : CQ-009C
- Insert the mirror cassette and put the unit in record/Playback mode.

1) Height Adjustment :

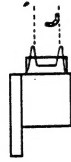
Check to see if the tape is curling at the tape guide of the head. If it is curling, tighten screws **A**, **B** and **C**, respectively by the same angle, moving the head so that it remains at the same angle throughout the procedure. If it curls on the bottom side of the mirror cassette (actually the inner side), tighten all the screws equally ; but loosen them if the tape begins to curl on the top side (outer side).



Normal
(Record/playback head
as seen from the side
of the erasehead.)



Curling on the inner
side
Tighten screws **A**, **B**
and **C**.



Curling on the outer
side
Loosen screws **A**, **B**
and **C**.

2) Declination Adjustment :

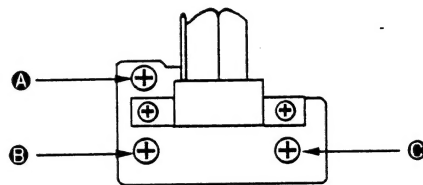
While in the record/playback position, set the back tension to 0 (wind the supply reel with something thin like a pencil in a counterclockwise direction) and make sure there is no curling or shifting (shifting up/shifting down) at the guide of the record/playback head.

Because shifting can only occur due to a difference in the width of the tape and that of the tape guides (curling will otherwise occur), it is necessary to pay close attention since it can be easily overlooked.

When there is a shift, tighten screws **B** and **C** equally and change the declination of the head. If the tape is shifting up, tighten the screws, and if it is shifting down, loosen them.

Repeat the adjustments in steps 1) to 2) and fine adjust the height and the declination.

Adjustment Location : — record/playback head —

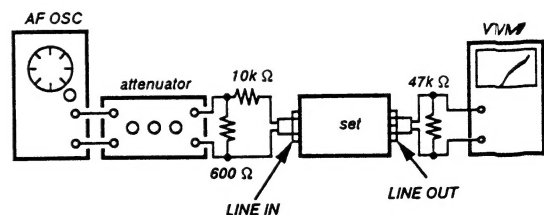


4-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

- The adjustment should be performed in the publication.
(Be sure to make playback adjustment at first.)
- The adjustments and measurement should be performed for both L-CH and R-CH.
 - Switch position
DOLBY NR switch : OFF
 - Standard record position:
Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

— Record Mode —



Standard Input Level

| Input terminal | LINE IN |
|--------------------|-----------------|
| source impedance | 10k Ω |
| input signal level | 0.5V (- 3.8dB) |

Standard Output Level

| Output terminal | LINE OUT |
|---------------------|-----------------|
| load impedance | 47k Ω |
| output signal level | 0.5V (- 3.8dB) |

Test Tape

| Tape | Contents | Use |
|----------|---------------|-----------------------|
| P-4-A100 | 10kHz, - 10dB | Azimuth Adjustment |
| P-4-L300 | 315Hz, 0dB | PB Level Adjustment |
| WS-48B | 3kHz, 0dB | Tape Speed Adjustment |

0dB=0.775V

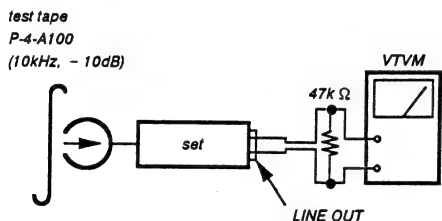
Test Mode

1. Insert a short-circuit plug into TP801 (2P) and turn ON the power switch. (Earth pin ⑨ of IC801 and turn ON the power switch.)
At first, all the fluorescent tubes light up, then the system returns to normal display. (However, "0000" is not displayed on the counter.)
2. To release the test mode, remove the short plug and turn off the power switch.
3. Remove the short plug after completion of adjustment.

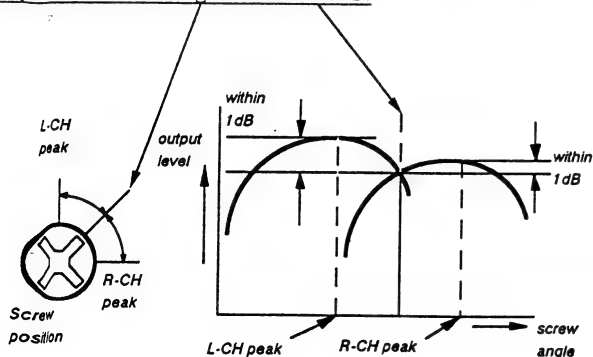
Record/Playback Head Azimuth Adjustment

Procedure :

1. Forward playback Mode

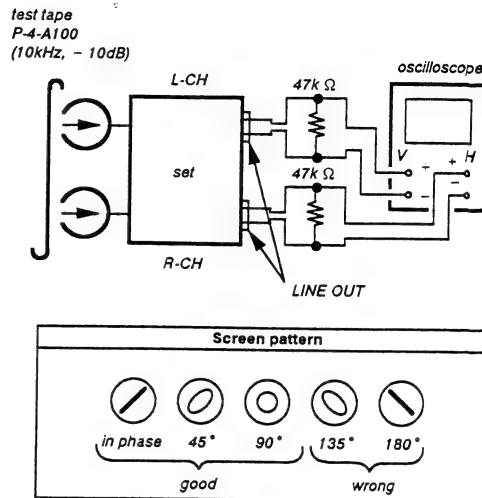


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



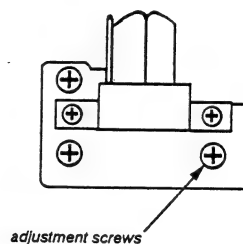
3. Phase check

Playback Mode



4. After the adjustment, lock the adjustment screws with suitable locking compound.

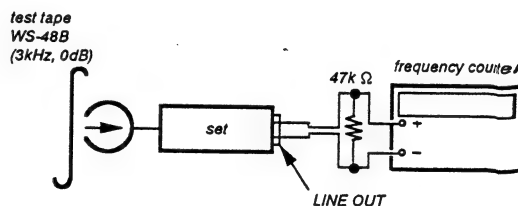
Adjustment Location : - record/playback head -



Tape Speed Adjustment

Procedure :

- Forward Playback Mode -



1. Set to FWD playback mode.
2. Adjust RV71 so that the frequency counter reading becomes $3,000 \pm 15\text{Hz}$.

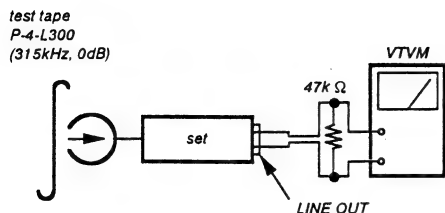
Frequency difference between the beginning and the end of the tape should be within 3%.

Adjustment Location : AUDIO board

Playback Level Adjustment

Procedure :

– Forward Playback Mode –



Adjust RV121 (L-CH) and RV221 (R-CH) so the VTVM reading becomes the adjustment limits below.

Adjustment Value :

LINE OUT level : $-7.7 \pm 0.5\text{dB}$ (0.301 to 0.338V)

Level difference between channels : within 0.5dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times

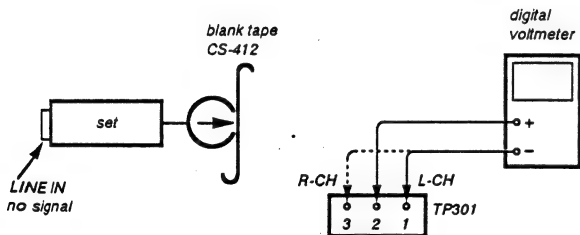
Adjustment Location : MAIN board

Bias Consumption Current Adjustment

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T101, T201).

Procedure :

() : R-CH



1. Connect the digital voltmeter to test point TP301.
2. Set RV103 (RV203) to mechanical center.
3. Set to FWD record mode.
4. Adjust T101 (T201) so that the digital voltmeter reading becomes minimum.

Adjustment Location : MAIN board

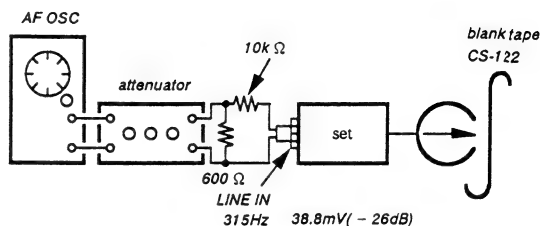
Record Level Adjustment

Setting :

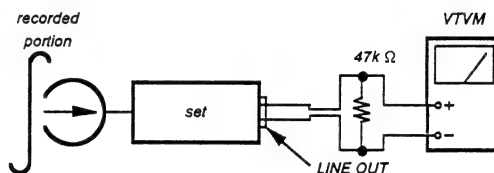
REC LEVEL control : standard record position (Refer to page 9.)

Procedure :

1. Record Mode



2. Playback Mode



Confirm playback the tape recorded become adjustment level as follows.

If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the steps 1 and 2.

Adjustment Value :

LINE OUT level : $-26 \pm 0.5\text{dB}$ (36.7 to 41.1mV)

Adjustment Location : MAIN board

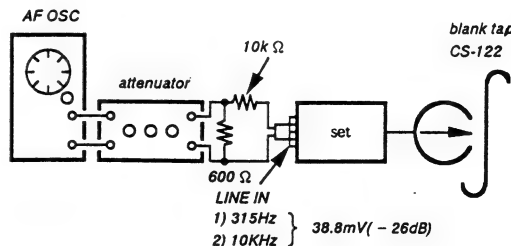
Record Bias Adjustment

Setting :

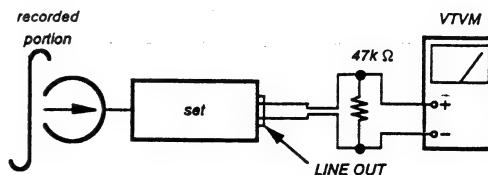
REC LEVEL control : standard record position (Refer to page 9.)

Procedure :

1. Record Mode



2. Playback Mode



Confirm that the 10kHz playback output is $0 \pm 0.3\text{dB}$ relative to the 315Hz output. If necessary, adjust RV103 (L-CH), RV203 (R-CH) and repeat the steps given above.

Adjustment Location : MAIN board

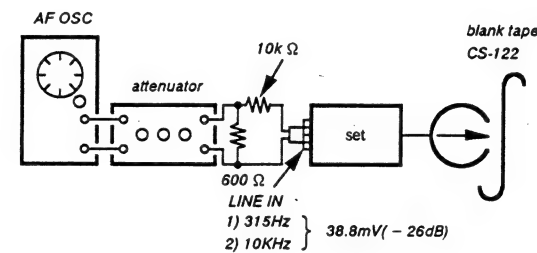
Record EQ (IV) Adjustment

Setting :

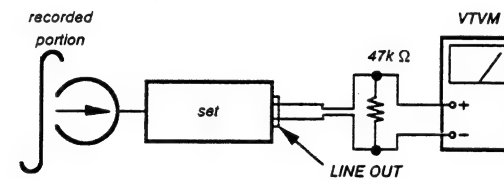
REC LEVEL control : standard record position (Refer to page 9.)

Procedure :

1. Record Mode



2. Playback Mode



1. Adjust RV102 and 202 so that they become maximum.
2. Adjust RV102 (L-CH) and 202(R-CH) so that the difference between R-CH and L-CH at 10 kHz is within 1dB.
3. Adjust RV306 so that the value of R-CH becomes the specified value.

Specified value :

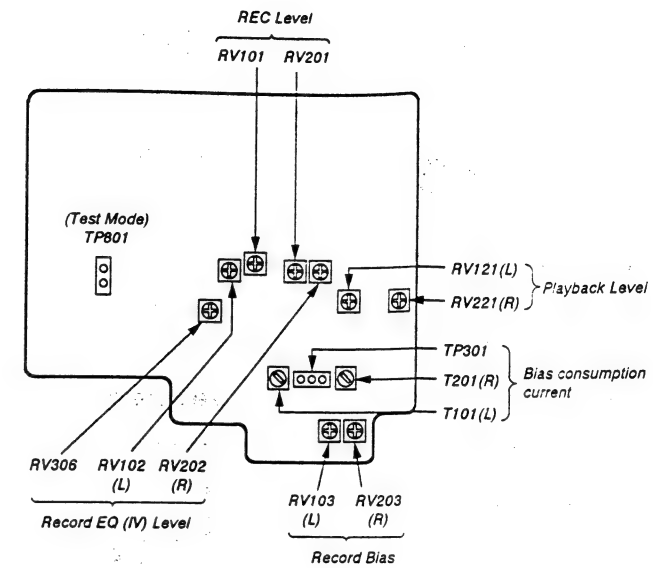
(the level at 10kHz against to 315Hz : $0\text{dB} \pm 1\text{dB}$)

Adjustment Location : MAIN board

— Adjustment Parts Location Diagrams —

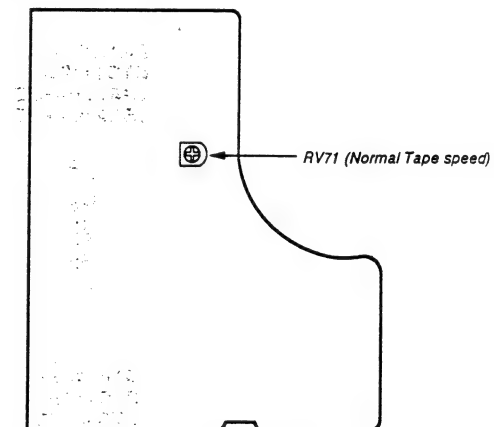
[MAIN BOARD]

(Component Side)



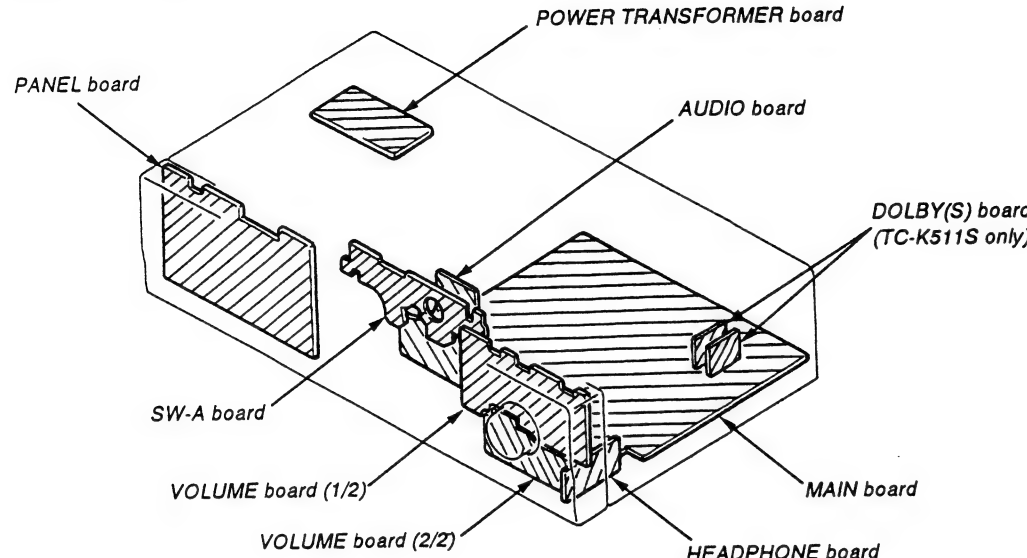
[AUDIO BOARD]

(Component Side)



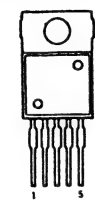
SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



● SEMICONDUCTOR LEAD LAYOUTS

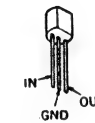
LA6500-FA



2SA473
2SD1585-K
2SD2012



PST600E



2SB1013-4
2SB1116A-L
2SC945-P



SBX1610-59



HZS6A1L
HZS7C1L
UZL-7L2
UZL-7H1



BN1L3Z-K
DTC144ES
2SA1175-HFE
2SC2785-HFE



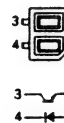
IN4148M
10E2N



DTA114ES
DTC114ES
DTC143TS
2SC2603-EF
2SD2144S



NJL5165K-B



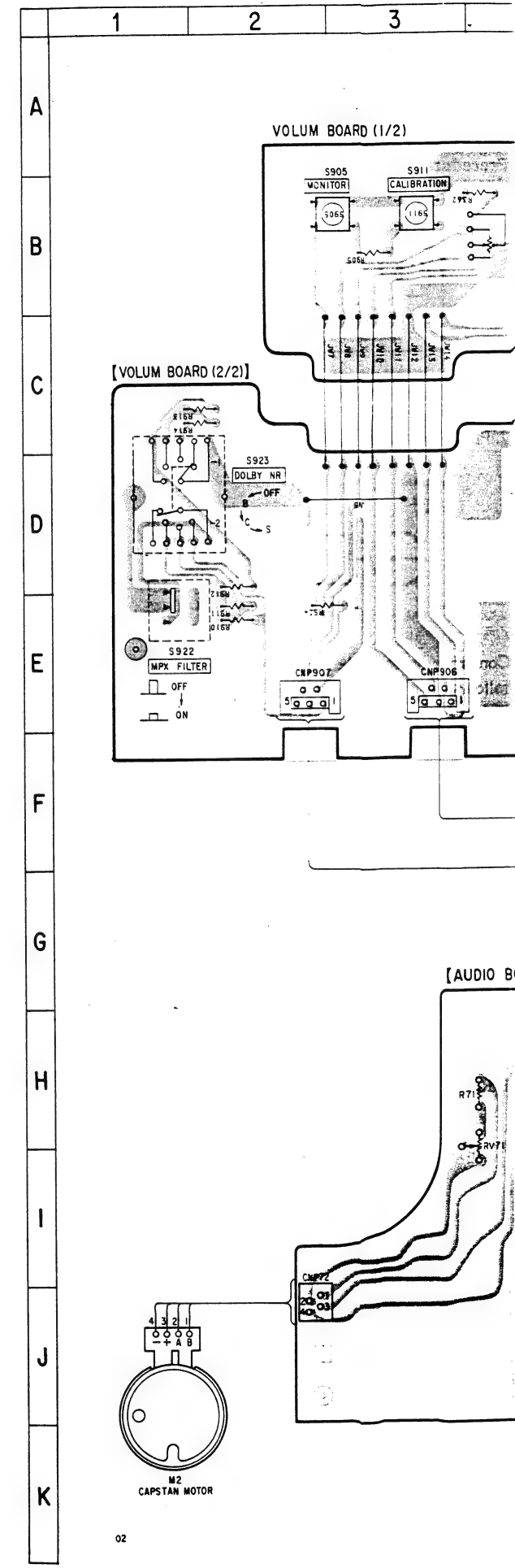
● SEMICONDUCTOR LOCATION

| Ref. No. | Location | Ref. No. | Location |
|----------|----------|----------|----------|
| D101 | B - 14 | IC801 | F - 16 |
| D102 | B - 14 | IC802 | F - 14 |
| D201 | C - 13 | IC803 | H - 16 |
| D202 | C - 13 | IC901 | G - 19 |
| D301 | B - 9 | | |
| D302 | B - 9 | Q101 | G - 9 |
| D303 | B - 9 | Q102 | C - 13 |
| D304 | B - 9 | Q103 | C - 10 |
| D305 | D - 14 | Q104 | G - 11 |
| D306 | H - 13 | Q105 | F - 12 |
| D307 | G - 13 | Q201 | G - 8 |
| D308 | G - 13 | Q202 | B - 10 |
| D310 | F - 12 | Q203 | C - 10 |
| D311 | B - 12 | Q204 | G - 10 |
| D312 | B - 12 | Q205 | F - 11 |
| D313 | C - 13 | Q301 | D - 14 |
| D314 | F - 13 | Q302 | H - 12 |
| D701 | C - 16 | Q303 | H - 12 |
| D702 | C - 16 | Q304 | H - 12 |
| D703 | C - 16 | Q305 | I - 12 |
| D704 | C - 16 | Q306 | I - 12 |
| D705 | C - 15 | Q307 | J - 12 |
| D706 | B - 16 | Q308 | J - 12 |
| D707 | C - 16 | Q309 | J - 12 |
| D708 | C - 16 | Q310 | H - 12 |
| D709 | D - 15 | Q311 | H - 12 |
| D711 | B - 17 | Q312 | B - 11 |
| D712 | B - 17 | Q313 | B - 13 |
| D713 | D - 17 | Q314 | B - 13 |
| D714 | D - 17 | Q315 | D - 12 |
| D715 | D - 17 | Q701 | E - 15 |
| D718 | C - 17 | Q702 | C - 15 |
| D801 | F - 14 | Q703 | A - 15 |
| D802 | F - 13 | Q704 | A - 16 |
| D803 | F - 13 | Q705 | A - 17 |
| D806 | G - 15 | Q706 | B - 17 |
| D814 | G - 13 | Q707 | B - 17 |
| D815 | G - 13 | Q708 | C - 17 |
| | | Q709 | D - 17 |
| | | Q801 | G - 15 |
| IC81 | K - 20 | Q802 | F - 14 |
| IC82 | K - 18 | Q803 | G - 15 |
| IC301 | H - 9 | Q804 | G - 15 |
| IC302 | C - 11 | Q805 | G - 15 |
| IC303 | G - 10 | Q806 | G - 15 |
| IC304 | I - 10 | Q807 | F - 15 |
| IC305 | D - 14 | Q808 | E - 15 |
| IC306 | C - 14 | Q809 | E - 15 |
| IC307 | F - 9 | Q810 | G - 14 |
| IC308 | B - 11 | Q813 | E - 14 |
| IC309 | B - 13 | | |
| IC310 | D - 9 | Q814 | E - 14 |
| IC311 | E - 11 | Q815 | E - 16 |
| IC312 | C - 9 | | |
| IC701 | B - 15 | | |

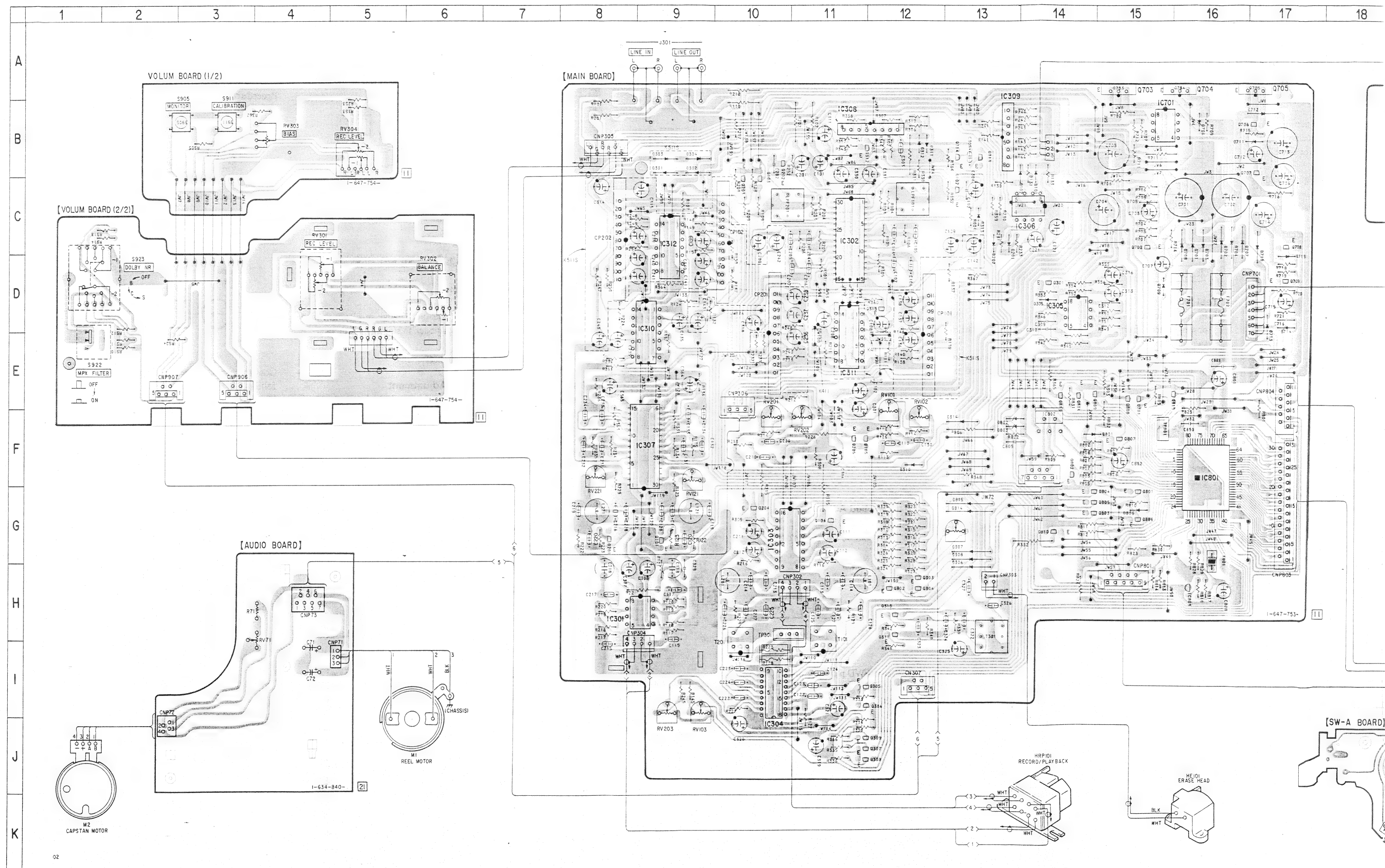
Note:

- : parts extracted from the component side.
- : parts mounted on the conductor side.
- ▨ : Pattern on the side which is seen.
- G : Germany
- AUS : Australian

5-2. PRINTED WIRING BOARDS (MAIN SECTION)

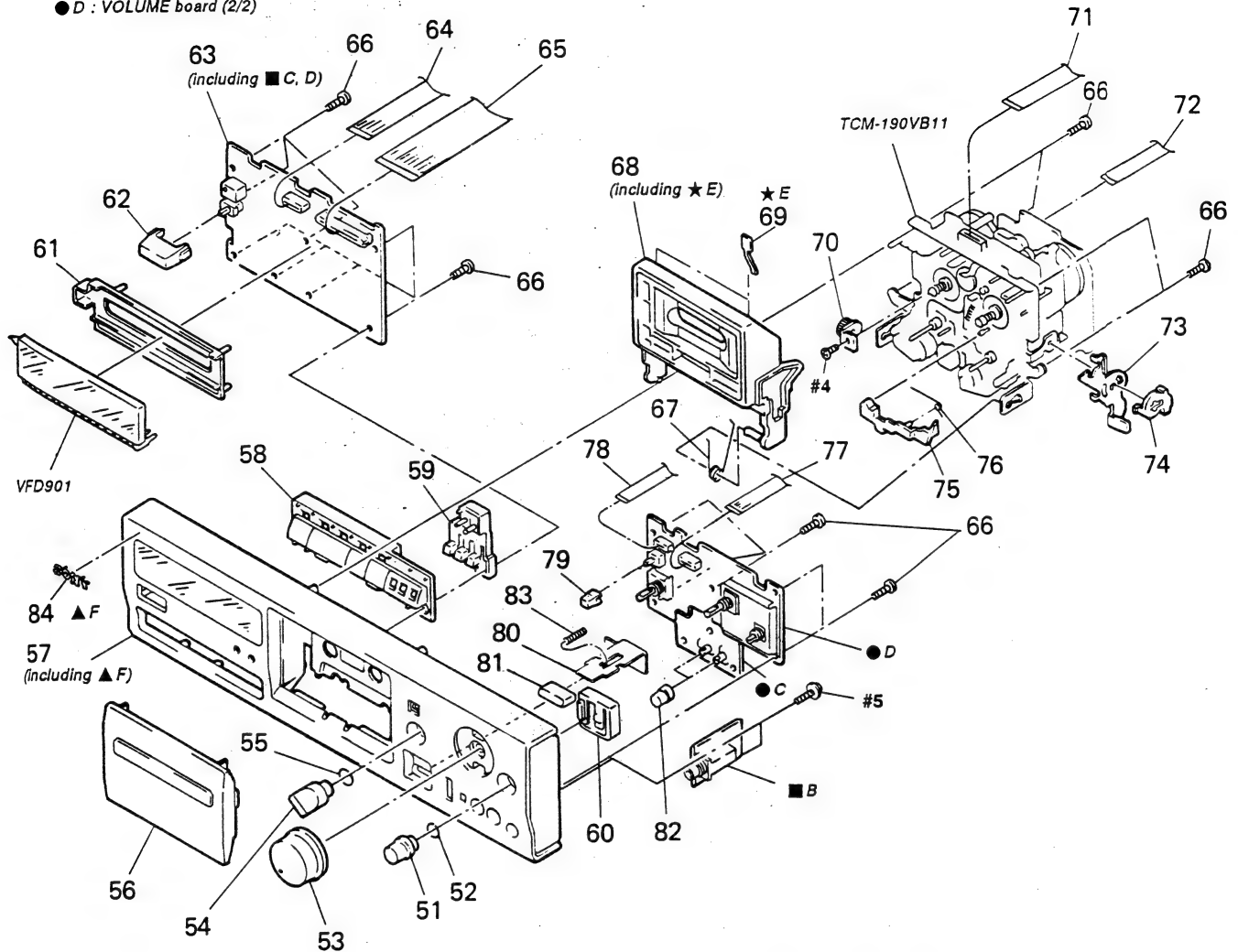


5-2. PRINTED WIRING BOARDS (MAIN SECTION)



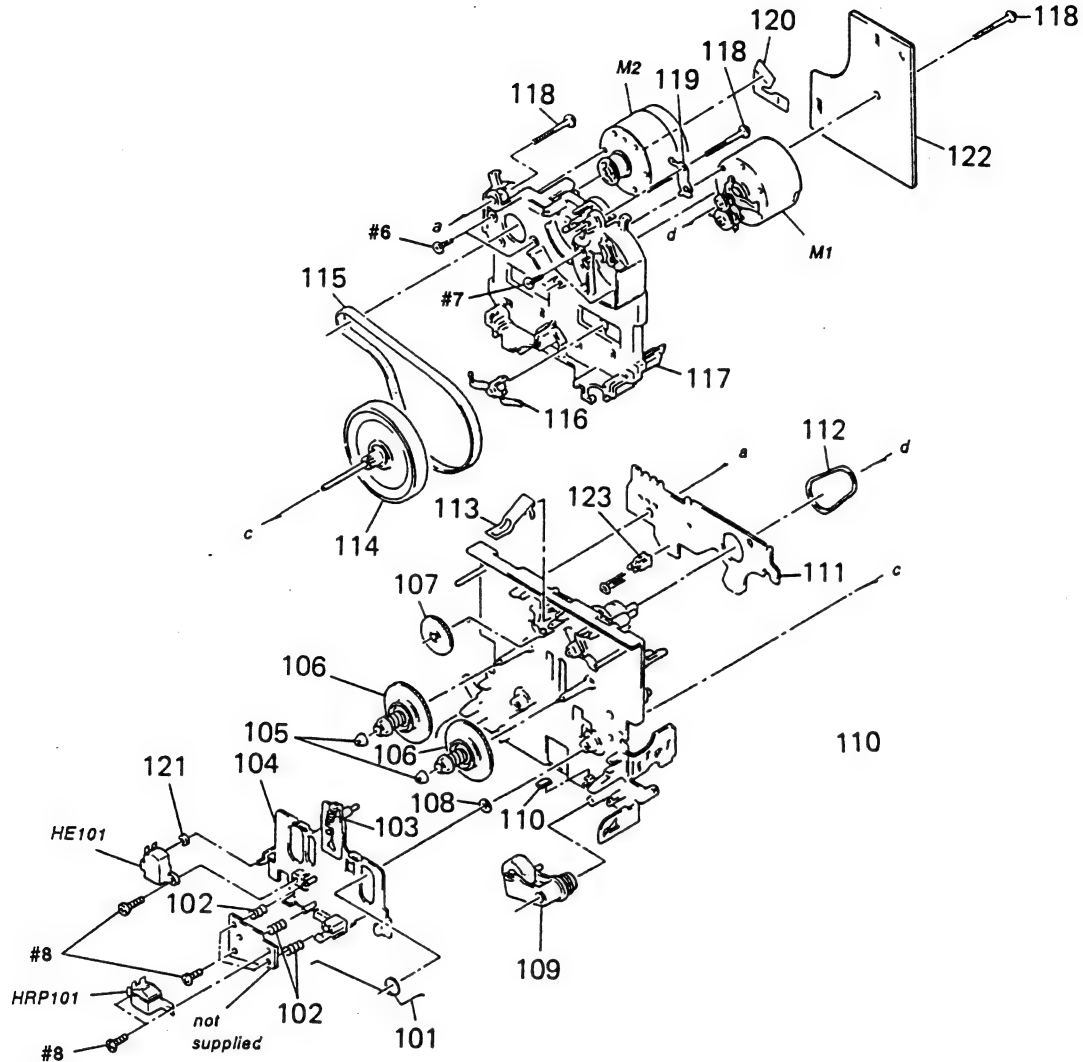
6-2. FRONT PANEL SECTION

- B : HEADPHONE board
- C : VOLUME board (1/2)
- D : VOLUME board (2/2)



| Ref. No. | Part No. | Description | Remark | Ref. No. | Part No. | Description | Remark |
|----------|--------------|-------------------------------|--------|----------|--------------|-----------------------------|--------|
| 51 | A-2004-274-A | KNOB (RB) ASSY | | 67 | 3-354-960-01 | SPRING (LOADING R), TORSION | |
| 52 | 3-354-981-01 | SPRING (SUS), RING | | 68 | X-3365-324-1 | HOLDER (R) ASSY, CASSETTE | |
| 53 | 3-367-438-11 | KNOB (REC) | | 69 | 3-308-823-11 | SPRING | |
| 54 | 4-908-097-21 | KNOB | | 70 | 3-354-963-01 | DAMPER | |
| 55 | 3-350-440-01 | SPRING | | 71 | 1-575-781-11 | WIRE, FLAT TYPE (9 CORE) | |
| 56 | X-3366-519-1 | LID ASSY, CASSETTE (K511S) | | 72 | 1-575-780-11 | WIRE, FLAT TYPE (7 CORE) | |
| 56 | X-3366-521-1 | LID ASSY, CASSETTE (K411) | | * 73 | 3-354-954-01 | LEVER (LOCK LEVER R) | |
| 57 | X-3366-520-1 | PANEL ASSY, FRONT (K511S) | | 74 | 3-354-957-01 | JOINT (LOCK LEVER) | |
| 57 | X-3366-522-1 | PANEL ASSY, FRONT (K411) | | 75 | 3-354-956-01 | LEVER (EJ SAFTY LEVER R) | |
| 58 | 3-386-247-01 | BUTTON (FW) | | 76 | 3-354-962-01 | SPRING (EJ SAFTY SPRING R) | |
| 59 | 3-386-248-01 | BUTTON (RE) | | 77 | 1-575-778-11 | WIRE, FLAT TYPE (5 CORE) | |
| 60 | 3-387-834-01 | BUTTON (MBC) | | 78 | 1-751-098-11 | WIRE (FLAT TYPE) (5 CORE) | |
| * 61 | 3-386-245-01 | HOLDER (FL) | | 79 | 3-380-952-01 | BUTTON | |
| 62 | 3-354-932-01 | BUTTON (POWER) | | 80 | 3-387-833-01 | SLIDER (EJECT) | |
| * 63 | A-2007-007-A | PANEL BOARD, COMPLETE (K411) | | 81 | 3-387-830-01 | BUTTON (EJECT) | |
| * 63 | A-2007-010-A | PANEL BOARD, COMPLETE (K511S) | | 82 | 3-367-431-01 | KNOB (BAL) | |
| 64 | 1-751-097-11 | WIRE (FLAT TYPE) (11 CORE) | | 83 | 3-359-906-01 | SPRING, COMPRESSION | |
| 65 | 1-751-096-11 | WIRE (FLAT TYPE) (31 CORE) | | 84 | 4-925-334-11 | EMBLEM (5-A), SONY | |
| 66 | 4-951-620-01 | SCREW (2. 6X8), +BVTP | | VFD901 | 1-517-163-11 | INDICATOR TUBE, FLUORESCENT | |

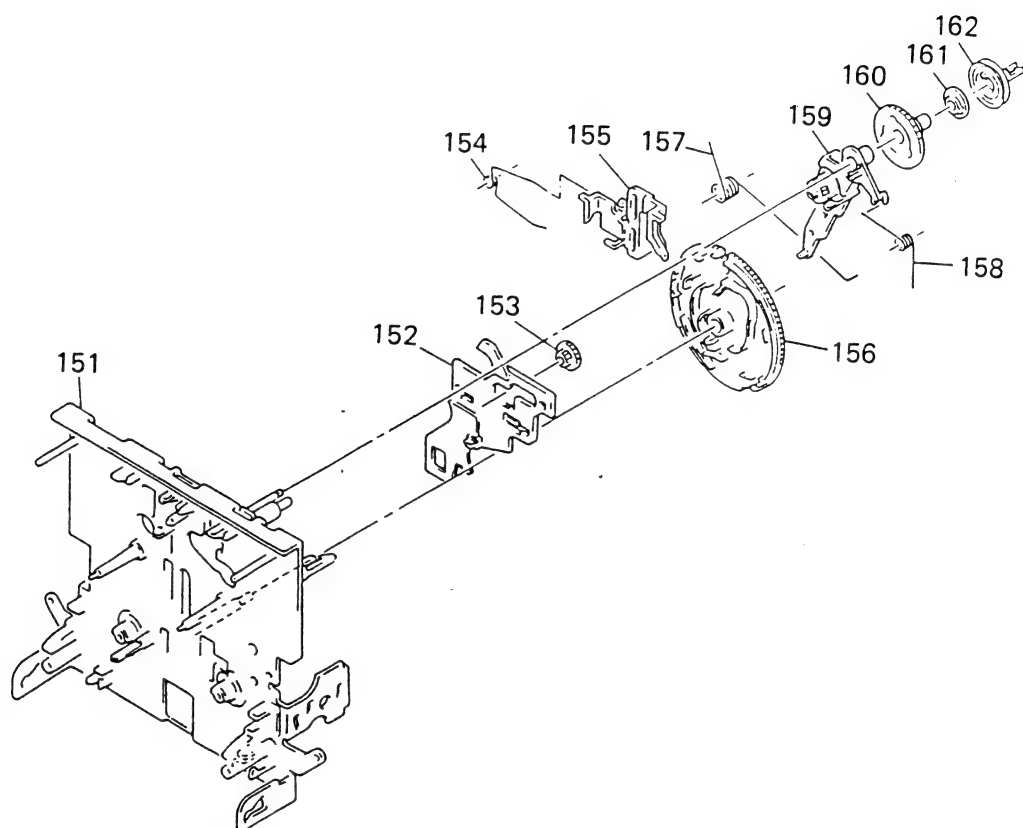
6-3. MECHANISM SECTION 1
(TCM-190VB11)



| Ref. No. | Part No. | Description | Remark |
|----------|--------------|---------------------------------|--------|
| 101 | 3-359-455-01 | SPRING, TORSION | |
| 102 | 3-356-659-01 | SPRING (RPH), COMPRESSION | |
| 103 | 3-363-868-01 | SPRING (HEAD CHASSIS), TENSION | |
| * 104 | X-3365-304-1 | SLIDER (HEAD PC BOARD) ASSY | |
| 105 | 3-362-308-01 | CAP (REEL) | |
| 106 | X-3362-078-1 | TABLE ASSY (B), REEL | |
| 107 | 3-359-424-01 | GEAR (REV GEAR) | |
| 108 | 3-356-713-01 | WASHER | |
| 109 | X-3359-408-1 | LEVER (PINCH LEVER FWD) ASSY | |
| 110 | 3-359-469-01 | SPACER | |
| * 111 | 1-634-841-14 | SW-A BOARD | |
| 112 | 3-359-466-01 | BELT (FR), SQUARE | |
| 113 | 3-359-430-01 | SPRING(CASSETTE RETAINER), LEAF | |
| 114 | X-3359-406-1 | FLYWHEEL (FWD) ASSY | |

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|----------------------------------|--------|
| 115 | 3-359-467-01 | BELT (1 WAY FLAT BELT) | |
| 116 | 3-575-321-00 | RETAINER, THRUST, CAPSTAN | |
| * 117 | 3-359-436-01 | BASE (THRUST RETAINER), FITTING | |
| 118 | 3-359-414-01 | SCREW (+PTPH 2X23) | |
| 119 | 3-359-450-01 | PLATE, GROUND | |
| 120 | 1-638-983-11 | PC BOARD, MOTOR FLEXIBLE | |
| 121 | 3-701-437-11 | WASHER | |
| * 122 | 1-634-840-21 | AUDIO BOARD | |
| 123 | 3-343-419-01 | HOLDER (S SENSER A) | |
| HE101 | 1-543-673-11 | HEAD, MAGNETIC (ERASE) | |
| HRP101 | 1-543-733-11 | HEAD, MAGNETIC (RECORD/PLAYBACK) | |
| M1 | X-3363-501-1 | MOTOR ASSY, REEL | |
| M2 | X-3365-377-1 | MOTOR ASSY, CAPSTAN | |

6-4. MECHANISM SECTION 2
(TCM-190VB11)



| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|---------|--------------|-------------------------------|--------|---------|--------------|---------------------------------|--------|
| 151 | X-3365-378-1 | CHASSIS (ONE)ASSY, MECHANICAL | | 157 | 3-359-456-01 | SPRING(TRIGGER SPRING), TORSION | |
| * 152 | 3-359-415-01 | SLIDER (TRIGGER SLIDER) | | 158 | 3-359-453-01 | SPRING (FR ARM), TORSION | |
| 153 | 3-359-448-01 | GEAR (TRIGGER) | | 159 | X-3359-405-1 | LEVER (FR ARM) ASSY | |
| 154 | 3-359-454-01 | SPRING, TORSION | | 160 | 3-359-419-01 | GEAR (FR GEAR) | |
| 155 | 3-359-429-01 | SLIDER (BRAKE PLATE) | | 161 | 3-359-421-01 | CLUTCH (REEL DISK) | |
| 156 | 3-359-420-01 | GEAR (CAM GEAR) | | 162 | 3-359-418-01 | PULLEY (FR PULLEY) | |

SECTION 7

ELECTRICAL PARTS LIST

AUDIO

DOLBY (S)

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal oxide-film resistor
F : nonflammable

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA..... : μ A....., uPA..... : μ PA.....
uPB..... : μ PB....., uPC..... : μ PC.....
uPD..... : μ PD.....
- CAPACITORS
uF : μ F
- COILS
uH : μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

- AUS : Australian

| Ref. No. | Part No. | Description | Remark | | | |
|----------|--------------|--|--------|-------------|--|--|
| * | 1-634-840-21 | AUDIO BOARD ***** | | | | |
| | | < CAPACITOR > | | | | |
| C71 | 1-124-903-11 | ELECT 1uF | 20% | 50V | | |
| C72 | 1-124-903-11 | ELECT 1uF | 20% | 50V | | |
| | | < CONNECTOR > | | | | |
| * CNP72 | 1-580-411-11 | SOCKET, CONNECTOR 4P | | | | |
| * CNP73 | 1-568-826-11 | SOCKET, CONNECTOR 7P | | | | |
| | | < RESISTOR > | | | | |
| R71 | 1-249-430-11 | CARBON 12K | 5% | 1/4W | | |
| | | < VARIABLE RESISTOR > | | | | |
| RV71 | 1-238-599-11 | RES, ADJ, CARBON 4.7K (TAPE SPEED) | | | | |
| ***** | | | | | | |
| * | A-2006-954-A | DOLBY (S) BOARD, COMPLATE (K511S) ***** | | | | |
| | | < CAPACITOR > | | | | |
| C1 | 1-164-222-11 | CERAMIC CHIP 0.22uF | | 25V (K511S) | | |
| C2 | 1-135-177-21 | TANTALUM CHIP 1uF | 20% | 20V (K511S) | | |
| C3 | 1-104-558-91 | FILM CHIP 0.039uF | 5% | 16V (K511S) | | |
| C4 | 1-163-007-11 | CERAMIC CHIP 680PF | 10% | 50V (K511S) | | |
| C5 | 1-163-009-11 | CERAMIC CHIP 0.001uF | 10% | 50V (K511S) | | |
| C6 | 1-164-717-11 | CERAMIC CHIP 0.0082uF | 5% | 50V (K511S) | | |
| C7 | 1-164-222-11 | CERAMIC CHIP 0.22uF | | 25V (K511S) | | |

| Ref. No. | Part No. | Description | Remark | | | |
|----------|--------------|-----------------------|--------|--------------|--|--|
| C8 | 1-104-562-11 | FILM CHIP 0.082uF | 5% | 16V (K511S) | | |
| C9 | 1-104-553-11 | FILM CHIP 0.015uF | 5% | 16V (K511S) | | |
| C10 | 1-165-319-11 | CERAMIC CHIP 0.1uF | | 50V (K511S) | | |
| C11 | 1-135-145-11 | TANTALUM CHIP 0.47uF | 10% | 35V (K511S) | | |
| C12 | 1-164-222-11 | CERAMIC CHIP 0.22uF | | 25V (K511S) | | |
| C13 | 1-165-319-11 | CERAMIC CHIP 0.1uF | | 50V (K511S) | | |
| C14 | 1-162-568-11 | CERAMIC CHIP 0.33uF | 10% | 16V (K511S) | | |
| C15 | 1-104-562-11 | FILM CHIP 0.082uF | 5% | 16V (K511S) | | |
| C16 | 1-135-145-11 | TANTALUM CHIP 0.47uF | 10% | 35V (K511S) | | |
| C17 | 1-165-319-11 | CERAMIC CHIP 0.1uF | | 50V (K511S) | | |
| C18 | 1-164-222-11 | CERAMIC CHIP 0.22uF | | 25V (K511S) | | |
| C19 | 1-163-035-00 | CERAMIC CHIP 0.047uF | | 50V (K511S) | | |
| C20 | 1-104-553-11 | FILM CHIP 0.015uF | 5% | 16V (K511S) | | |
| C21 | 1-164-717-11 | CERAMIC CHIP 0.0082uF | 5% | 50V (K511S) | | |
| C22 | 1-163-009-11 | CERAMIC CHIP 0.001uF | 10% | 50V (K511S) | | |
| C23 | 1-164-161-11 | CERAMIC CHIP 0.0022uF | 10% | 100V (K511S) | | |
| C24 | 1-163-005-11 | CERAMIC CHIP 470PF | 10% | 50V (K511S) | | |
| C25 | 1-163-012-00 | CERAMIC CHIP 0.0018uF | 10% | 50V (K511S) | | |

DOLBY (S)

| Ref. No. | Part No. | Description | Remark | | |
|---------------|--------------|---------------------|---------------------|-------|------------------|
| C26 | 1-104-558-91 | FILM CHIP | 0.039uF | 5% | 16V (K511S) |
| C27 | 1-163-012-00 | CERAMIC CHIP | 0.0018uF | 10% | 50V (K511S) |
| C28 | 1-163-012-00 | CERAMIC CHIP | 0.0018uF | 10% | 50V (K511S) |
| C29 | 1-104-563-11 | FILM CHIP | 0.1uF | 5% | 16V (K511S) |
| C30 | 1-135-145-11 | TANTALUM CHIP | 0.47uF | 10% | 35V (K511S) |
| C31 | 1-104-555-11 | FILM CHIP | 0.022uF | 5% | 16V (K511S) |
| C32 | 1-104-563-11 | FILM CHIP | 0.1uF | 5% | 16V (K511S) |
| C33 | 1-163-024-00 | CERAMIC CHIP | 0.018uF | 10% | 50V (K511S) |
| C34 | 1-104-563-11 | FILM CHIP | 0.1uF | 5% | 16V (K511S) |
| C35 | 1-163-012-00 | CERAMIC CHIP | 0.0018uF | 10% | 50V (K511S) |
| C36 | 1-165-319-11 | CERAMIC CHIP | 0.1uF | | 50V (K511S) |
| C37 | 1-164-222-11 | CERAMIC CHIP | 0.22uF | | 25V (K511S) |
| C38 | 1-163-024-00 | CERAMIC CHIP | 0.018uF | 10% | 50V (K511S) |
| C39 | 1-104-555-11 | FILM CHIP | 0.022uF | 5% | 16V (K511S) |
| C40 | 1-104-563-11 | FILM CHIP | 0.1uF | 5% | 16V (K511S) |
| < CONNECTOR > | | | | | |
| * CN1 | 1-537-473-11 | TERMINAL (LEAD PIN) | | | |
| < IC > | | | | | |
| IC1 | 8-752-056-51 | IC | CXA1417Q-T6 (K511S) | | |
| IC2 | 8-759-711-85 | IC | NJM4580E-D (K511S) | | |
| < RESISTOR > | | | | | |
| R1 | 1-216-013-00 | METAL CHIP | 33 | 5% | 1/10W (K511S) |
| R2 | 1-216-675-11 | METAL CHIP | 10K | 0.5% | 1/10W (K511S) |
| R3 | 1-216-681-11 | METAL CHIP | 18K | 0.5% | 1/10W (K511S) |
| R4 | 1-218-774-11 | METAL CHIP | 820K | 0.50% | 1/10W (K511S) |
| R5 | 1-216-668-11 | METAL CHIP | 5.1K | 0.5% | 1/10W (K511S) |

| Ref. No. | Part No. | Description | Remark | | |
|----------|--------------|-------------|--------|-------|------------------|
| R6 | 1-216-656-11 | METAL CHIP | 1.6K | 0.5% | 1/10W (K511S) |
| R7 | 1-216-657-11 | METAL CHIP | 1.8K | 0.5% | 1/10W (K511S) |
| R8 | 1-216-065-00 | METAL CHIP | 4.7K | 5% | 1/10W (K511S) |
| R9 | 1-216-058-00 | METAL GLAZE | 2.4K | 5% | 1/10W (K511S) |
| R10 | 1-216-654-11 | METAL CHIP | 1.3K | 0.5% | 1/10W (K511S) |
| R11 | 1-216-013-00 | METAL CHIP | 33 | 5% | 1/10W (K511S) |
| R12 | 1-216-017-00 | METAL CHIP | 47 | 5% | 1/10W (K511S) |
| R13 | 1-216-051-00 | METAL CHIP | 1.2K | 5% | 1/10W (K511S) |
| R14 | 1-216-065-00 | METAL CHIP | 4.7K | 5% | 1/10W (K511S) |
| R15 | 1-216-058-00 | METAL GLAZE | 2.4K | 5% | 1/10W (K511S) |
| R16 | 1-216-013-00 | METAL CHIP | 33 | 5% | 1/10W (K511S) |
| R17 | 1-216-017-00 | METAL CHIP | 47 | 5% | 1/10W (K511S) |
| R18 | 1-216-055-00 | METAL CHIP | 1.8K | 5% | 1/10W (K511S) |
| R19 | 1-216-656-11 | METAL CHIP | 1.6K | 0.5% | 1/10W (K511S) |
| R20 | 1-216-668-11 | METAL CHIP | 5.1K | 0.5% | 1/10W (K511S) |
| R21 | 1-218-774-11 | METAL CHIP | 820K | 0.50% | 1/10W (K511S) |
| R22 | 1-216-655-11 | METAL CHIP | 1.5K | 0.5% | 1/10W (K511S) |
| R23 | 1-216-678-11 | METAL CHIP | 13K | 0.5% | 1/10W (K511S) |
| R24 | 1-216-673-11 | METAL CHIP | 8.2K | 0.5% | 1/10W (K511S) |
| R25 | 1-216-675-11 | METAL CHIP | 10K | 0.5% | 1/10W (K511S) |
| R26 | 1-216-676-11 | METAL CHIP | 11K | 0.5% | 1/10W (K511S) |
| R27 | 1-216-668-11 | METAL CHIP | 5.1K | 0.5% | 1/10W (K511S) |
| R28 | 1-216-697-11 | METAL CHIP | 82K | 0.5% | 1/10W (K511S) |
| R29 | 1-216-668-11 | METAL CHIP | 5.1K | 0.5% | 1/10W (K511S) |

DOLBY (S)

MAIN

| Ref. No. | Part No. | Description | Remark |
|---------------|--------------|-------------------------------|-----------------------|
| R30 | 1-216-660-11 | METAL CHIP 2.4K | 0.5% 1/10W (K511S) |
| R31 | 1-216-680-11 | METAL CHIP 16K | 0.5% 1/10W (K511S) |
| R32 | 1-216-685-11 | METAL CHIP 27K | 0.5% 1/10W (K511S) |
| R33 | 1-216-080-00 | METAL CHIP 20K | 5% 1/10W (K511S) |
| R34 | 1-216-684-11 | METAL CHIP 24K | 0.5% 1/10W (K511S) |
| R35 | 1-216-084-00 | METAL CHIP 30K | 5% 1/10W (K511S) |
| R36 | 1-216-084-00 | METAL CHIP 30K | 5% 1/10W (K511S) |
| R37 | 1-216-074-00 | METAL CHIP 11K | 5% 1/10W (K511S) |
| R38 | 1-216-086-00 | METAL GLAZE 36K | 5% 1/10W (K511S) |
| R39 | 1-216-066-00 | METAL CHIP 5.1K | 5% 1/10W (K511S) |
| R40 | 1-216-084-00 | METAL CHIP 30K | 5% 1/10W (K511S) |
| R41 | 1-216-078-00 | METAL GLAZE 16K | 5% 1/10W (K511S) |
| R42 | 1-216-071-00 | METAL CHIP 8.2K | 5% 1/10W (K511S) |
| R43 | 1-216-081-00 | METAL CHIP 22K | 5% 1/10W (K511S) |
| R44 | 1-216-689-11 | METAL CHIP 39K | 0.5% 1/10W (K511S) |
| R45 | 1-216-689-11 | METAL CHIP 39K | 0.5% 1/10W (K511S) |
| R53 | 1-216-058-00 | METAL GLAZE 2.4K | 5% 1/10W (K511S) |
| R54 | 1-216-675-11 | METAL CHIP 10K | 0.5% 1/10W (K511S) |
| R55 | 1-216-666-11 | METAL CHIP 4.3K | 0.5% 1/10W (K511S) |
| ***** | | | |
| * | A-2007-008-A | MAIN BOARD, COMPLETE (K411) | ***** |
| * | A-2007-009-A | MAIN BOARD, COMPLETE (K511S) | ***** |
| * | 1-533-213-31 | HOLDER, FUSE | |
| * | 1-690-880-31 | LEAD (WITH CONNECTOR) (K511S) | |
| < CAPACITOR > | | | |
| C101 | 1-124-927-11 | ELECT 4.7uF | 20% 100V |
| C102 | 1-161-375-00 | CERAMIC 0.0022uF | 20% 50V |

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|----------------------|--------------------|
| C104 | 1-130-475-00 | MYLAR 0.0022uF | 5% 50V |
| C105 | 1-130-475-00 | MYLAR 0.0022uF | 5% 50V |
| C106 | 1-136-174-00 | FILM 0.56uF | 5% 50V |
| C107 | 1-136-171-00 | FILM 0.33uF | 5% 50V |
| C108 | 1-124-907-11 | ELECT 10uF | 20% 50V |
| C109 | 1-124-907-11 | ELECT 10uF | 20% 50V |
| C110 | 1-136-175-00 | FILM 0.68uF | 5% 50V |
| C111 | 1-124-907-11 | ELECT 10uF | 20% 50V |
| C112 | 1-124-907-11 | ELECT 10uF | 20% 50V |
| C113 | 1-110-338-51 | MYLAR 180PF | 5% 50V |
| C114 | 1-136-935-11 | FILM 22PF | 5% 630V |
| C115 | 1-110-340-11 | MYLAR 270PF | 5% 50V |
| C116 | 1-130-474-00 | MYLAR 0.0018uF | 5% 50V |
| C117 | 1-136-157-00 | FILM 0.022uF | 5% 50V |
| C118 | 1-126-320-11 | ELECT, NONPOLAR 10uF | 20% 16V |
| C119 | 1-102-518-11 | CERAMIC 33PF | 5% 50V |
| C120 | 1-130-488-00 | MYLAR 0.027uF | 5% 50V |
| C121 | 1-124-925-11 | ELECT 2.2uF | 20% 100V |
| C122 | 1-136-153-00 | FILM 0.01uF | 5% 50V |
| C123 | 1-136-157-00 | FILM 0.022uF | 5% 50V |
| C124 | 1-136-161-00 | FILM 0.047uF | 5% 50V |
| C125 | 1-136-803-11 | FILM 560PF | 5% 630V |
| C126 | 1-130-468-00 | MYLAR 560PF | 5% 50V |
| C127 | 1-136-433-11 | FILM 100PF | 5% 630V |
| C128 | 1-130-474-00 | MYLAR 0.0018uF | 5% 50V |
| C130 | 1-130-475-00 | MYLAR 0.0022uF | 5% 50V |
| C131 | 1-130-475-00 | MYLAR 0.0022uF | 5% 50V |
| C132 | 1-130-475-00 | MYLAR 0.0022uF | 5% 50V |
| C133 | 1-136-174-00 | FILM 0.56uF | 5% 50V |
| C134 | 1-136-171-00 | FILM 0.33uF | 5% 50V |
| C135 | 1-124-907-11 | ELECT 10uF | 20% 50V |
| C136 | 1-124-907-11 | ELECT 10uF | 20% 50V (K511S) |
| C137 | 1-124-916-11 | ELECT 22uF | 20% 63V (K511S) |
| C138 | 1-124-907-11 | ELECT 10uF | 20% 50V (K511S) |
| C139 | 1-124-907-11 | ELECT 10uF | 20% 50V (K511S) |
| C140 | 1-124-916-11 | ELECT 22uF | 20% 63V (K511S) |
| C141 | 1-124-907-11 | ELECT 10uF | 20% 50V (K511S) |
| C142 | 1-124-907-11 | ELECT 10uF | 20% 50V |
| C143 | 1-124-907-11 | ELECT 10uF | 20% 50V |
| C201 | 1-124-927-11 | ELECT 4.7uF | 20% 100V |
| C202 | 1-161-375-00 | CERAMIC 0.0022uF | 20% 50V |
| C204 | 1-130-475-00 | MYLAR 0.0022uF | 5% 50V |
| C205 | 1-130-475-00 | MYLAR 0.0022uF | 5% 50V |

MAIN

| Ref.No. | Part No. | Description | Remark | | |
|---------|--------------|-----------------|----------|-----|----------------|
| C206 | 1-136-174-00 | FILM | 0.56uF | 5% | 50V |
| C207 | 1-136-171-00 | FILM | 0.33uF | 5% | 50V |
| C208 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C209 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C210 | 1-136-175-00 | FILM | 0.68uF | 5% | 50V |
| C211 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C212 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C213 | 1-110-338-51 | MYLAR | 180PF | 5% | 50V |
| C214 | 1-136-935-11 | FILM | 22PF | 5% | 630V |
| C215 | 1-110-340-11 | MYLAR | 270PF | 5% | 50V |
| C216 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V |
| C217 | 1-136-157-00 | FILM | 0.022uF | 5% | 50V |
| C218 | 1-126-320-11 | ELECT, NONPOLAR | 10uF | 20% | 16V |
| C219 | 1-102-518-11 | CERAMIC | 33PF | 5% | 50V |
| C220 | 1-130-488-00 | MYLAR | 0.027uF | 5% | 50V |
| C221 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |
| C222 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C223 | 1-136-157-00 | FILM | 0.022uF | 5% | 50V |
| C224 | 1-136-161-00 | FILM | 0.047uF | 5% | 50V |
| C225 | 1-136-803-11 | FILM | 560PF | 5% | 630V |
| C226 | 1-130-468-00 | MYLAR | 560PF | 5% | 50V |
| C227 | 1-136-433-11 | FILM | 100PF | 5% | 630V |
| C228 | 1-130-474-00 | MYLAR | 0.0018uF | 5% | 50V |
| C230 | 1-130-475-00 | MYLAR | 0.0022uF | 5% | 50V |
| C231 | 1-130-475-00 | MYLAR | 0.0022uF | 5% | 50V |
| C232 | 1-130-475-00 | MYLAR | 0.0022uF | 5% | 50V |
| C233 | 1-136-174-00 | FILM | 0.56uF | 5% | 50V |
| C234 | 1-136-171-00 | FILM | 0.33uF | 5% | 50V |
| C235 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C236 | 1-124-907-11 | ELECT | 10uF | 20% | 50V (K511S) |
| C237 | 1-124-916-11 | ELECT | 22uF | 20% | 63V (K511S) |
| C238 | 1-124-907-11 | ELECT | 10uF | 20% | 50V (K511S) |
| C239 | 1-124-907-11 | ELECT | 10uF | 20% | 50V (K511S) |
| C240 | 1-124-916-11 | ELECT | 22uF | 20% | 63V (K511S) |
| C241 | 1-124-907-11 | ELECT | 10uF | 20% | 50V (K511S) |
| C242 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C243 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C301 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C302 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C303 | 1-130-478-00 | MYLAR | 0.0039uF | 5% | 50V |
| C304 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C305 | 1-136-164-00 | FILM | 0.082uF | 5% | 50V |
| C306 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |

| Ref.No. | Part No. | Description | Remark | | |
|---------|--------------|-------------|----------|-----|----------------|
| C307 | 1-124-443-00 | ELECT | 100uF | 20% | 10V |
| C308 | 1-124-443-00 | ELECT | 100uF | 20% | 10V |
| C309 | 1-162-217-31 | CERAMIC | 56PF | 5% | 50V |
| C310 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C311 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |
| C312 | 1-162-217-31 | CERAMIC | 56PF | 5% | 50V |
| C313 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |
| C314 | 1-124-907-11 | ELECT | 10uF | 20% | 50V (K511S) |
| C315 | 1-124-907-11 | ELECT | 10uF | 20% | 50V (K511S) |
| C316 | 1-124-902-00 | ELECT | 0.47uF | 20% | 50V |
| C317 | 1-162-306-11 | CERAMIC | 0.01uF | 20% | 16V |
| C318 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C319 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C320 | 1-124-477-11 | ELECT | 47uF | 20% | 25V |
| C321 | 1-124-477-11 | ELECT | 47uF | 20% | 25V |
| C322 | 1-136-253-11 | FILM | 0.0018uF | 5% | 100V |
| C323 | 1-136-253-11 | FILM | 0.0018uF | 5% | 100V |
| C324 | 1-136-233-11 | FILM | 0.0047uF | 5% | 100V |
| C325 | 1-124-916-11 | ELECT | 22uF | 20% | 63V |
| C326 | 1-136-558-11 | FILM | 0.0039uF | 5% | 630V |
| C327 | 1-107-045-00 | MICA | 3.9PF | | 500V |
| C329 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C330 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C331 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C364 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C365 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C701 | 1-126-936-11 | ELECT | 3300uF | 20% | 16V |
| C702 | 1-126-936-11 | ELECT | 3300uF | 20% | 16V |
| C703 | 1-126-176-11 | ELECT | 220uF | 20% | 10V |
| C704 | 1-126-926-11 | ELECT | 1000uF | 20% | 10V |
| C705 | 1-126-926-11 | ELECT | 1000uF | 20% | 10V |
| C706 | 1-124-120-11 | ELECT | 220uF | 20% | 25V |
| C707 | 1-124-927-11 | ELECT | 4.7uF | 20% | 100V |
| C708 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C709 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C712 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C713 | 1-126-926-11 | ELECT | 1000uF | 20% | 10V |
| C714 | 1-124-122-11 | ELECT | 100uF | 20% | 50V |
| C715 | 1-124-910-11 | ELECT | 47uF | 20% | 50V |
| C716 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C801 | 1-124-443-00 | ELECT | 100uF | 20% | 10V |
| C802 | 1-126-176-11 | ELECT | 220uF | 20% | 10V |
| C805 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C808 | 1-123-382-00 | ELECT | 3.3uF | 20% | 100V |
| C809 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C850 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V (K511S) |

MAIN

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|-------------|-------------------------|
| C850 | 1-161-357-00 | CERAMIC | 0.0022uF 20% 50V (K411) |

< CONNECTOR >

| | | | |
|----------|--------------|------------------------------|--|
| * CNP301 | 1-564-337-00 | PIN, CONNECTOR 3P | |
| * CNP302 | 1-560-062-00 | PIN, CONNECTOR 4P | |
| * CNP303 | 1-560-060-00 | PIN, CONNECTOR 2P | |
| * CNP304 | 1-560-062-00 | PIN, CONNECTOR 4P | |
| * CNP305 | 1-691-462-11 | PIN, CONNECTOR (PC BOARD) 6P | |

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|----------|--------------|------------------------------|--|
| * CNP306 | 1-568-824-11 | SOCKET, CONNECTOR 5P | |
| * CNP307 | 1-568-824-11 | SOCKET, CONNECTOR 5P | |
| * CNP701 | 1-564-510-11 | PLUG, CONNECTOR 7P | |
| * CNP705 | 1-580-230-31 | PIN, CONNECTOR (PC BOARD) 2P | |
| * CNP801 | 1-568-828-11 | SOCKET, CONNECTOR 9P | |

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|----------|--------------|-----------------------|--|
| * CNP802 | 1-568-826-11 | SOCKET, CONNECTOR 7P | |
| * CNP803 | 1-568-845-11 | SOCKET, CONNECTOR 31P | |
| * CNP804 | 1-568-830-11 | SOCKET, CONNECTOR 11P | |

< DIODE >

| | | | |
|------|--------------|-------|-----------------|
| D101 | 8-719-987-63 | DIODE | 1N4148M |
| D102 | 8-719-987-63 | DIODE | 1N4148M |
| D201 | 8-719-987-63 | DIODE | 1N4148M |
| D202 | 8-719-987-63 | DIODE | 1N4148M |
| D301 | 8-719-987-63 | DIODE | 1N4148M (K511S) |

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|------|--------------|-------|-----------------|
| D302 | 8-719-987-63 | DIODE | 1N4148M (K511S) |
| D303 | 8-719-987-63 | DIODE | 1N4148M (K511S) |
| D304 | 8-719-987-63 | DIODE | 1N4148M (K511S) |
| D305 | 8-719-987-63 | DIODE | 1N4148M |
| D306 | 8-719-987-63 | DIODE | 1N4148M |

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|------|--------------|-------|---------|
| D307 | 8-719-987-63 | DIODE | 1N4148M |
| D308 | 8-719-987-63 | DIODE | 1N4148M |
| D310 | 8-719-987-63 | DIODE | 1N4148M |
| D311 | 8-719-987-63 | DIODE | 1N4148M |
| D312 | 8-719-987-63 | DIODE | 1N4148M |

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|------|--------------|-------|---------|
| D313 | 8-719-987-63 | DIODE | 1N4148M |
| D314 | 8-719-987-63 | DIODE | 1N4148M |
| D701 | 8-719-200-77 | DIODE | 10E2N |
| D702 | 8-719-200-77 | DIODE | 10E2N |
| D703 | 8-719-200-77 | DIODE | 10E2N |

| | | | |
|------|--------------|-------|---------|
| D704 | 8-719-200-77 | DIODE | 10E2N |
| D705 | 8-719-933-33 | DIODE | HZS6A1L |
| D706 | 8-719-933-33 | DIODE | HZS6A1L |
| D707 | 8-719-200-77 | DIODE | 10E2N |
| D708 | 8-719-200-77 | DIODE | 10E2N |

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|------|--------------|-------|---------|
| D709 | 8-719-987-63 | DIODE | 1N4148M |
| D711 | 8-719-000-78 | DIODE | UZL-7L2 |
| D712 | 8-719-200-77 | DIODE | 10E2N |
| D713 | 8-719-987-63 | DIODE | 1N4148M |
| D714 | 8-719-000-93 | DIODE | UZL-7H1 |

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|-------------|---------|
| D715 | 8-719-987-63 | DIODE | 1N4148M |
| D718 | 8-719-200-77 | DIODE | 10E2N |
| D801 | 8-719-987-63 | DIODE | 1N4148M |
| D802 | 8-719-933-33 | DIODE | HZS6A1L |
| D803 | 8-719-933-33 | DIODE | HZS6A1L |

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|------|--------------|-------|---------|
| D806 | 8-719-987-63 | DIODE | 1N4148M |
| D814 | 8-719-987-63 | DIODE | 1N4148M |
| D815 | 8-719-987-63 | DIODE | 1N4148M |

< FUSE >

| | | | |
|-------|--------------|------------------------|--|
| △F701 | 1-532-285-00 | FUSE, TIME-LAG (1.25A) | |
| △F702 | 1-532-285-00 | FUSE, TIME-LAG (1.25A) | |

< IC >

| | | | |
|-------|--------------|----|------------|
| IC301 | 8-759-111-44 | IC | uPC4570C-1 |
| IC302 | 8-752-059-55 | IC | CXA1331S |
| IC303 | 8-752-060-64 | IC | CXA1198AP |
| IC304 | 8-759-106-56 | IC | uPC1297CA |
| IC305 | 8-759-145-58 | IC | uPC4558C |

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|-------|--------------|----|------------|
| IC306 | 8-759-145-58 | IC | uPC4558C |
| IC307 | 8-752-059-55 | IC | CXA1331S |
| IC308 | 8-759-634-50 | IC | M5218AL |
| IC309 | 8-759-634-50 | IC | M5218AL |
| IC310 | 8-759-000-49 | IC | MC14066BCP |

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|-------|--------------|----|--------------------|
| IC311 | 8-759-000-49 | IC | MC14066BCP (K511S) |
| IC312 | 8-759-000-49 | IC | MC14066BCP (K511S) |
| IC701 | 8-759-634-51 | IC | M5218AP |
| IC801 | 8-752-841-98 | IC | CXP82316-018Q |
| IC802 | 8-759-803-42 | IC | LA6500-FA |

| | | | |
|-------|--------------|----|-----------|
| IC803 | 8-759-165-82 | IC | PST600E-T |
|-------|--------------|----|-----------|

< JACK >

| | | | |
|------|--------------|--------------------------------|--|
| J301 | 1-565-258-11 | JACK, PIN 4P (HEADPHONES) | |
| J302 | 1-568-519-41 | JACK, LARGE TYPE (LINE IN/OUT) | |

< COIL >

| | | | |
|------|--------------|----------|------|
| L101 | 1-410-780-11 | INDUCTOR | 27mH |
| L121 | 1-410-778-11 | INDUCTOR | 18mH |
| L201 | 1-410-780-11 | INDUCTOR | 27mH |
| L221 | 1-410-778-11 | INDUCTOR | 18mH |

< FILTER >

| | | | |
|--------|--------------|------------------|--|
| LPF101 | 1-231-388-00 | FILTER, LOW PASS | |
| LPF201 | 1-231-388-00 | FILTER, LOW PASS | |

< TRANSISTOR >



| | | | |
|------|--------------|------------|----------|
| Q101 | 8-729-900-74 | TRANSISTOR | DTC143TS |
| Q102 | 8-729-900-80 | TRANSISTOR | DTC114ES |

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN

| Ref. No. | Part No. | Description | Remark |
|--------------|--------------|-------------------------|--------|
| Q103 | 8-729-922-37 | TRANSISTOR 2SD2144S-UVW | |
| Q104 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | |
| Q105 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q201 | 8-729-900-74 | TRANSISTOR DTC143TS | |
| Q202 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q203 | 8-729-922-37 | TRANSISTOR 2SD2144S-UVW | |
| Q204 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | |
| Q205 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q301 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | |
| Q302 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q303 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q304 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q305 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | |
| Q306 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q307 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q308 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q309 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q310 | 8-729-194-57 | TRANSISTOR 2SC945-P | |
| Q311 | 8-729-194-57 | TRANSISTOR 2SC945-P | |
| Q312 | 8-729-922-37 | TRANSISTOR 2SD2144S-UVW | |
| Q313 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | |
| Q314 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | |
| Q315 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q701 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q702 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q703 | 8-729-141-83 | TRANSISTOR 2SB1094-LK | |
| Q704 | 8-729-141-89 | TRANSISTOR 2SD1585-K | |
| Q705 | 8-729-209-15 | TRANSISTOR 2SD2012 | |
| Q706 | 8-729-620-05 | TRANSISTOR 2SC2603-EF | |
| Q707 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q708 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | |
| Q709 | 8-729-140-04 | TRANSISTOR 2SB1116A-L | |
| Q801 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q802 | 8-729-801-84 | TRANSISTOR 2SB1013-4 | |
| Q803 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q804 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q805 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q806 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q807 | 8-729-115-28 | TRANSISTOR BN1L3Z-K | |
| Q808 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q809 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q810 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q813 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q814 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q815 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| < RESISTOR > | | | |
| R101 | 1-249-433-11 | CARBON 22K 5% | 1/4W |
| R102 | 1-249-417-11 | CARBON 1K 5% | 1/4W |

| Ref. No. | Part No. | Description | Remark |
|----------|--------------|----------------|--------------|
| R103 | 1-249-423-11 | CARBON 3.3K 5% | 1/4W |
| R104 | 1-249-428-11 | CARBON 8.2K 5% | 1/4W |
| R105 | 1-247-864-11 | CARBON 24K 5% | 1/4W |
| R106 | 1-249-414-11 | CARBON 560 5% | 1/4W |
| R107 | 1-249-421-11 | CARBON 2.2K 5% | 1/4W |
| R108 | 1-247-860-11 | CARBON 16K 5% | 1/4W |
| R109 | 1-249-421-11 | CARBON 2.2K 5% | 1/4W |
| R110 | 1-249-417-11 | CARBON 1K 5% | 1/4W |
| R111 | 1-249-437-11 | CARBON 47K 5% | 1/4W |
| R112 | 1-249-423-11 | CARBON 3.3K 5% | 1/4W |
| R113 | 1-249-424-11 | CARBON 3.9K 5% | 1/4W |
| R114 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R115 | 1-249-421-11 | CARBON 2.2K 5% | 1/4W |
| R116 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R117 | 1-249-441-11 | CARBON 100K 5% | 1/4W |
| R118 | 1-249-403-11 | CARBON 68 5% | 1/4W |
| R119 | 1-247-882-11 | CARBON 130K 5% | 1/4W |
| R120 | 1-249-426-11 | CARBON 5.6K 5% | 1/4W |
| R121 | 1-249-421-11 | CARBON 2.2K 5% | 1/4W |
| R122 | 1-249-420-11 | CARBON 1.8K 5% | 1/4W |
| R123 | 1-247-838-00 | CARBON 2K 5% | 1/4W |
| R124 | 1-249-437-11 | CARBON 47K 5% | 1/4W |
| R125 | 1-249-421-11 | CARBON 2.2K 5% | 1/4W |
| R126 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R127 | 1-249-435-11 | CARBON 33K 5% | 1/4W |
| △R128 | 1-219-153-11 | FUSIBLE 10 5% | 1/4W F |
| R129 | 1-247-883-00 | CARBON 150K 5% | 1/4W |
| R130 | 1-249-434-11 | CARBON 27K 5% | 1/4W |
| R131 | 1-247-874-11 | CARBON 62K 5% | 1/4W |
| R132 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R133 | 1-249-410-11 | CARBON 270 5% | 1/4W |
| R134 | 1-247-864-11 | CARBON 24K 5% | 1/4W |
| R135 | 1-249-414-11 | CARBON 560 5% | 1/4W |
| R136 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R137 | 1-215-445-00 | METAL 10K 1% | 1/6W (K511S) |
| R138 | 1-215-445-00 | METAL 10K 1% | 1/6W (K511S) |
| R139 | 1-215-440-00 | METAL 6.2K 1% | 1/6W (K511S) |
| R140 | 1-215-449-00 | METAL 15K 1% | 1/6W (K511S) |
| R141 | 1-249-419-11 | CARBON 1.5K 5% | 1/4W |
| R142 | 1-249-421-11 | CARBON 2.2K 5% | 1/4W |
| R143 | 1-247-844-11 | CARBON 3.6K 5% | 1/4W |
| R144 | 1-249-409-11 | CARBON 220 5% | 1/4W |
| R145 | 1-249-426-11 | CARBON 5.6K 5% | 1/4W |
| R146 | 1-249-437-11 | CARBON 47K 5% | 1/4W (K511S) |

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

MAIN

| Ref. No. | Part No. | Description | | | Remark | Ref. No. | Part No. | Description | | | Remark |
|----------|--------------|-------------|-------|----|-----------------|----------|--------------|-------------|-------|----|-----------------|
| R147 | 1-215-449-00 | METAL | 15K | 1% | 1/6W (K511S) | R238 | 1-215-445-00 | METAL | 10K | 1% | 1/6W (K511S) |
| R148 | 1-215-424-00 | METAL | 1. 3K | 1% | 1/6W (K511S) | R239 | 1-215-440-00 | METAL | 6. 2K | 1% | 1/6W (K511S) |
| R149 | 1-215-425-00 | METAL | 1. 5K | 1% | 1/6W (K511S) | R240 | 1-215-449-00 | METAL | 15K | 1% | 1/6W (K511S) |
| R150 | 1-215-447-00 | METAL | 12K | 1% | 1/6W (K511S) | R241 | 1-249-419-11 | CARBON | 1. 5K | 5% | 1/4W |
| R151 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W (K511S) | R242 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W |
| R152 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | R243 | 1-247-844-11 | CARBON | 3. 6K | 5% | 1/4W |
| R201 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | R244 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W |
| R202 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | R245 | 1-249-426-11 | CARBON | 5. 6K | 5% | 1/4W |
| R203 | 1-249-423-11 | CARBON | 3. 3K | 5% | 1/4W | R246 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W (K511S) |
| R204 | 1-249-428-11 | CARBON | 8. 2K | 5% | 1/4W | R247 | 1-215-449-00 | METAL | 15K | 1% | 1/6W (K511S) |
| R205 | 1-247-864-11 | CARBON | 24K | 5% | 1/4W | R248 | 1-215-424-00 | METAL | 1. 3K | 1% | 1/6W (K511S) |
| R206 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | R249 | 1-215-425-00 | METAL | 1. 5K | 1% | 1/6W (K511S) |
| R207 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W | R250 | 1-215-447-00 | METAL | 12K | 1% | 1/6W (K511S) |
| R208 | 1-247-860-11 | CARBON | 16K | 5% | 1/4W | R251 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W (K511S) |
| R209 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W | R252 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W |
| R210 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | R301 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R211 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | R302 | 1-247-848-11 | CARBON | 5. 1K | 5% | 1/4W |
| R212 | 1-249-423-11 | CARBON | 3. 3K | 5% | 1/4W | R303 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W |
| R213 | 1-249-424-11 | CARBON | 3. 9K | 5% | 1/4W | R304 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W |
| R214 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | R305 | 1-215-455-00 | METAL | 27K | 1% | 1/6W |
| R215 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W | R306 | 1-249-436-11 | CARBON | 39K | 5% | 1/4W |
| R216 | 1-249-425-11 | CARBON | 4. 7K | 5% | 1/4W | R307 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W |
| R217 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | R308 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R218 | 1-249-403-11 | CARBON | 68 | 5% | 1/4W | R309 | 1-247-864-11 | CARBON | 24K | 5% | 1/4W |
| R219 | 1-247-882-11 | CARBON | 130K | 5% | 1/4W | R310 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R220 | 1-249-426-11 | CARBON | 5. 6K | 5% | 1/4W | R311 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R221 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W | R312 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W |
| R222 | 1-249-420-11 | CARBON | 1. 8K | 5% | 1/4W | R313 | 1-247-878-00 | CARBON | 91K | 5% | 1/4W |
| R223 | 1-247-838-00 | CARBON | 2K | 5% | 1/4W | R314 | 1-249-439-11 | CARBON | 68K | 5% | 1/4W |
| R224 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | R315 | 1-247-870-11 | CARBON | 43K | 5% | 1/4W |
| R225 | 1-249-421-11 | CARBON | 2. 2K | 5% | 1/4W | R316 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R226 | 1-249-425-11 | CARBON | 4. 7K | 5% | 1/4W | R317 | 1-247-876-11 | CARBON | 75K | 5% | 1/4W |
| R227 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | R318 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W |
| △R228 | 1-219-153-11 | FUSIBLE | 10 | 5% | 1/4W F | R319 | 1-247-878-00 | CARBON | 91K | 5% | 1/4W |
| R229 | 1-247-883-00 | CARBON | 150K | 5% | 1/4W | R320 | 1-247-874-11 | CARBON | 62K | 5% | 1/4W |
| R230 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | R321 | 1-247-878-00 | CARBON | 91K | 5% | 1/4W |
| R231 | 1-247-874-11 | CARBON | 62K | 5% | 1/4W | R322 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W |
| R232 | 1-249-425-11 | CARBON | 4. 7K | 5% | 1/4W | R323 | 1-249-439-11 | CARBON | 68K | 5% | 1/4W |
| R233 | 1-249-410-11 | CARBON | 270 | 5% | 1/4W | R324 | 1-247-886-11 | CARBON | 200K | 5% | 1/4W |
| R234 | 1-247-864-11 | CARBON | 24K | 5% | 1/4W | R325 | 1-247-874-11 | CARBON | 62K | 5% | 1/4W |
| R235 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | | | | | | |
| R236 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | | | | | | |
| R237 | 1-215-445-00 | METAL | 10K | 1% | 1/6W (K511S) | | | | | | |

The components identified by mark **△** or dotted line with mark **△** are critical for safety. Replace only with part number specified.

| Ref. No. | Part No. | Description | | | Remark | Ref. No. | Part No. | Description | | | Remark |
|----------|--------------|-------------|------|----|--------|-----------------------|--------------|------------------|------|----|--------|
| R326 | 1-247-874-11 | CARBON | 62K | 5% | 1/4W | R708 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W |
| R327 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | R709 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R328 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | R711 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R329 | 1-249-440-11 | CARBON | 82K | 5% | 1/4W | R712 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R330 | 1-247-836-11 | CARBON | 1.6K | 5% | 1/4W | R713 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W |
| R331 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | R714 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W |
| R332 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | R715 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R333 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | R716 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R334 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | R718 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W |
| R335 | 1-247-822-11 | CARBON | 430 | 5% | 1/4W | R719 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R336 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | R720 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W |
| R337 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | R721 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W |
| R338 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | R801 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R339 | 1-249-440-11 | CARBON | 82K | 5% | 1/4W | R803 | 1-247-862-11 | CARBON | 20K | 5% | 1/4W |
| R340 | 1-249-440-11 | CARBON | 82K | 5% | 1/4W | R802 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R341 | 1-249-390-11 | CARBON | 5.6 | 5% | 1/6W | R804 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R342 | 1-249-390-11 | CARBON | 5.6 | 5% | 1/6W | R805 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R343 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | R806 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R344 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | R807 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W |
| R345 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | R808 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W |
| R346 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | R809 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W |
| R347 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | R810 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W |
| R348 | 1-249-428-11 | CARBON | 8.2K | 5% | 1/4W | R811 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R349 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | R812 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R350 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | R813 | 1-247-866-11 | CARBON | 30K | 5% | 1/4W |
| R351 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | R814 | 1-247-866-11 | CARBON | 30K | 5% | 1/4W |
| R352 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | R815 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W |
| R353 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | R817 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W |
| R354 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | R818 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R355 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | R821 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W |
| R356 | 1-249-435-11 | CARBON | 33K | 5% | 1/4W | R822 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W |
| R357 | 1-247-848-11 | CARBON | 5.1K | 5% | 1/4W | R823 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W |
| R358 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | R824 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W |
| R359 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | R825 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R360 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | R826 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R361 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | R827 | 1-249-405-11 | CARBON | 100 | 5% | 1/4W |
| R363 | 1-215-455-00 | METAL | 27K | 1% | 1/6W | R828 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R364 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | R829 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R365 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | R830 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R366 | 1-247-862-11 | CARBON | 20K | 5% | 1/4W | R831 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R367 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | R832 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R368 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | < VARIABLE RESISTOR > | | | | | |
| R701 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | RV101 | 1-238-601-11 | RES, ADJ, CARBON | 22K | | |
| R702 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | RV102 | 1-238-602-11 | RES, ADJ, CARBON | 47K | | |
| R703 | 1-249-420-11 | CARBON | 1.8K | 5% | 1/4W | RV103 | 1-238-601-11 | RES, ADJ, CARBON | 22K | | |
| R704 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | RV121 | 1-238-599-11 | RES, ADJ, CARBON | 4.7K | | |
| R705 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | RV201 | 1-238-601-11 | RES, ADJ, CARBON | 22K | | |
| R706 | 1-249-419-11 | CARBON | 1.5K | 5% | 1/4W | | | | | | |
| R707 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | | | | | | |

MAIN PANEL SW-A

| Ref.No. | Part No. | Description | Remark |
|---------|--------------|-----------------------|--------|
| RV202 | 1-238-602-11 | RES. ADJ. CARBON 47K | |
| RV203 | 1-238-601-11 | RES. ADJ. CARBON 22K | |
| RV221 | 1-238-599-11 | RES. ADJ. CARBON 4.7K | |
| RV306 | 1-223-387-21 | RES. ADJ. CARBON 330K | |

< TRANSFORMER >

| | | | |
|------|--------------|-------------------------------|--|
| T101 | 1-433-344-11 | TRANSFORMER, BIAS OSCILLATION | |
| T201 | 1-433-344-11 | TRANSFORMER, BIAS OSCILLATION | |
| T301 | 1-423-614-11 | TRANSFORMER, BIAS OSCILLATION | |

< TEST PIN >

| | | | |
|---------|--------------|--------------------|--|
| * TP301 | 1-564-506-11 | PLUG, CONNECTOR 3P | |
| * TP801 | 1-564-505-11 | PLUG, CONNECTOR 2P | |

< CRYSTAL >

| | | | |
|-------|--------------|-------------------------------|--|
| X801 | 1-579-175-11 | VIBRATOR, CERAMIC | |
| ***** | | | |
| * | A-2007-007-A | PANEL BOARD, COMPLETE (K411) | |
| ***** | | | |
| * | A-2007-010-A | PANEL BOARD, COMPLETE (K511S) | |
| ***** | | | |
| * | 3-386-245-01 | HOLDER (FL) | |

< CONNECTOR >

| | | | |
|----------|--------------|-----------------------|--|
| * CNP903 | 1-568-845-11 | SOCKET, CONNECTOR 31P | |
| * CNP904 | 1-568-830-11 | SOCKET, CONNECTOR 11P | |
| * CNP906 | 1-568-824-11 | SOCKET, CONNECTOR 5P | |
| * CNP907 | 1-568-824-11 | SOCKET, CONNECTOR 5P | |

< IC >

| | | | |
|-------|--------------|----|------------|
| IC901 | 8-741-100-48 | IC | SBX1610-59 |
|-------|--------------|----|------------|

< RESISTOR >

| | | | | | |
|------|--------------|--------|------|----|------|
| R153 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R253 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W |
| R362 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W |
| R901 | 1-247-838-00 | CARBON | 2K | 5% | 1/4W |
| R902 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W |
| R903 | 1-247-848-11 | CARBON | 5.1K | 5% | 1/4W |
| R904 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W |
| R905 | 1-247-866-11 | CARBON | 30K | 5% | 1/4W |
| R906 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W |
| R907 | 1-249-424-11 | CARBON | 3.9K | 5% | 1/4W |
| R908 | 1-249-428-11 | CARBON | 8.2K | 5% | 1/4W |
| R909 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W |
| R910 | 1-247-838-00 | CARBON | 2K | 5% | 1/4W |
| R911 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W |

| Ref.No. | Part No. | Description | Remark |
|---------|--------------|-------------|--------------|
| R912 | 1-247-848-11 | CARBON | 5.1K 5% 1/4W |
| R913 | 1-249-430-11 | CARBON | 12K 5% 1/4W |
| R914 | 1-247-866-11 | CARBON | 30K 5% 1/4W |

< VARIABLE RESISTOR >

| | | | |
|-------|--------------|--------------------------------------|--|
| RV301 | 1-241-820-11 | RES. VAR. CARBON 50K/50K (REC LEVEL) | |
| RV302 | 1-241-897-11 | RES. VAR. CARBON 50K/50K (BALANCE) | |
| RV303 | 1-241-896-11 | RES. VAR. CARBON 10K (BIAS) | |
| RV304 | 1-223-366-11 | RES. VAR. CARBON 5K/5K (REC LEVEL) | |

< SWITCH >

| | | | |
|------|--------------|---------------------------|--|
| S901 | 1-554-303-21 | SWITCH, TACTILE (▷) | |
| S902 | 1-554-303-21 | SWITCH, TACTILE (PAUSE:⏸) | |
| S903 | 1-554-303-21 | SWITCH, TACTILE (RESET) | |
| S904 | 1-554-303-21 | SWITCH, TACTILE (MEMORY) | |
| S905 | 1-554-303-21 | SWITCH, TACTILE (MONITOR) | |

| | | | |
|------|--------------|----------------------------|--|
| S906 | 1-554-303-21 | SWITCH, TACTILE (■) | |
| S907 | 1-554-303-21 | SWITCH, TACTILE (<◁) | |
| S908 | 1-554-303-21 | SWITCH, TACTILE (▷) | |
| S909 | 1-554-303-21 | SWITCH, TACTILE (REC) | |
| S910 | 1-554-303-21 | SWITCH, TACTILE (REC MUTE) | |

| | | | |
|------|--------------|-----------------------------------|--|
| S911 | 1-554-303-21 | SWITCH, TACTILE (CALIBRATION) | |
| S921 | 1-692-409-11 | SWITCH, PUSH (1 KEY) (POWER) | |
| S922 | 1-554-118-00 | SWITCH, PUSH (1 KEY) (MPX FILTER) | |
| S923 | 1-692-408-11 | SWITCH, ROTARY (DOLBY NR) (K411) | |
| S923 | 1-692-410-11 | SWITCH, ROTARY (DOLBY NR) (K511S) | |

< FILTER >

| | | | |
|--------|--------------|-----------------------------|--|
| VFD901 | 1-517-163-11 | INDICATOR TUBE, FLUORESCENT | |
| ***** | | | |

| | | | |
|-------|--------------|------------|--|
| * | 1-634-841-14 | SW-A BOARD | |
| ***** | | | |

| | | |
|--------------|---------------------|--|
| 3-343-419-01 | HOLDER (S SENSER A) | |
|--------------|---------------------|--|

< CONNECTOR >

| | | | |
|---------|--------------|----------------------|--|
| * CNP81 | 1-568-852-11 | SOCKET, CONNECTOR 9P | |
|---------|--------------|----------------------|--|

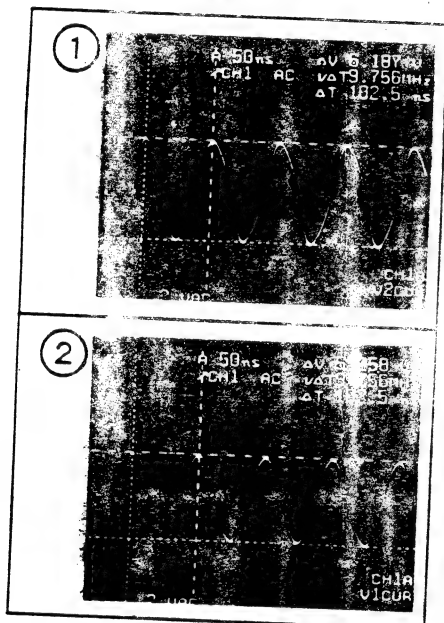
< IC >

| | | | |
|------|--------------|-------|------------|
| IC81 | 8-719-710-03 | DIODE | NJL5165K-B |
| IC82 | 8-719-710-03 | DIODE | NJL5165K-B |

< RESISTOR >

| | | | | | |
|-----|--------------|--------|------|----|------|
| R81 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W |
| R83 | 1-247-834-11 | CARBON | 1.3K | 5% | 1/4W |
| R84 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R85 | 1-249-408-11 | CARBON | 180 | 5% | 1/4W |
| R86 | 1-249-408-11 | CARBON | 180 | 5% | 1/4W |

WAVEFORMS

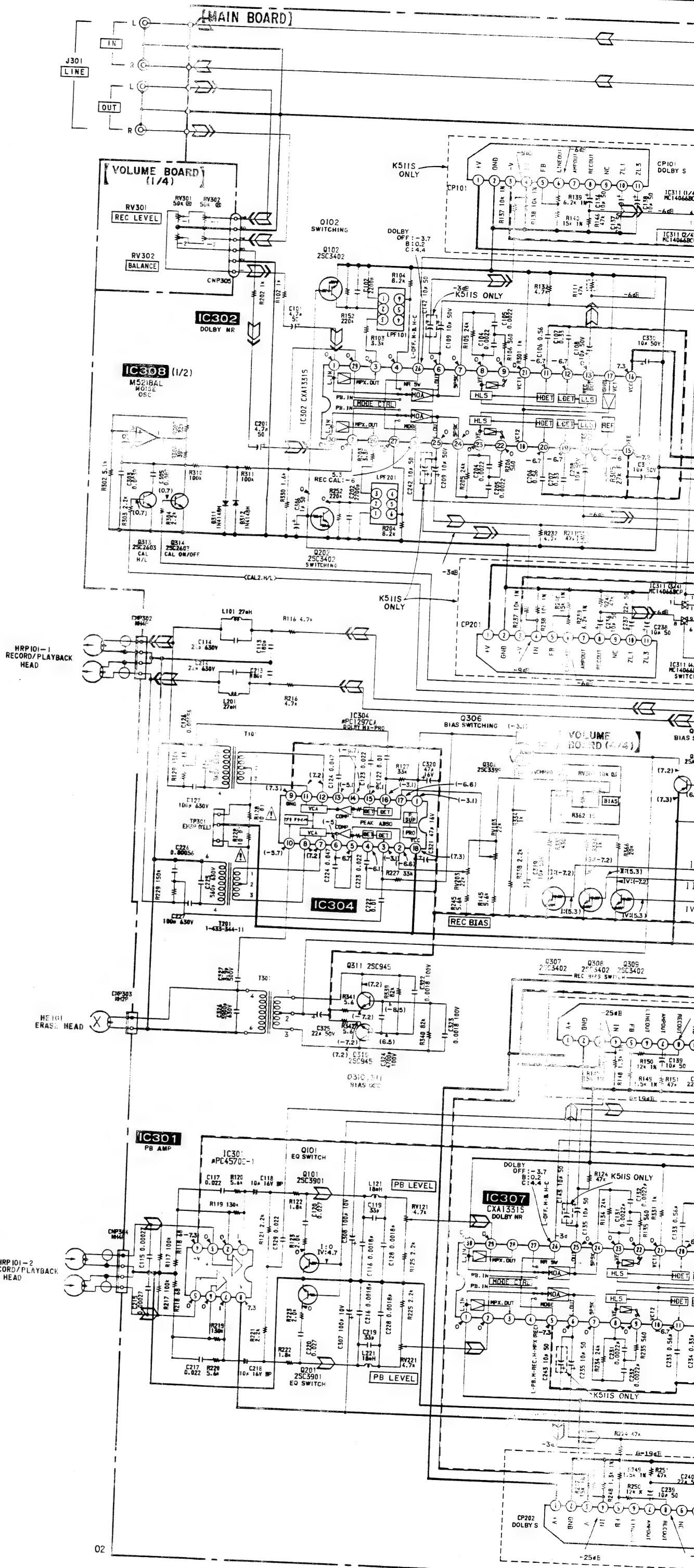


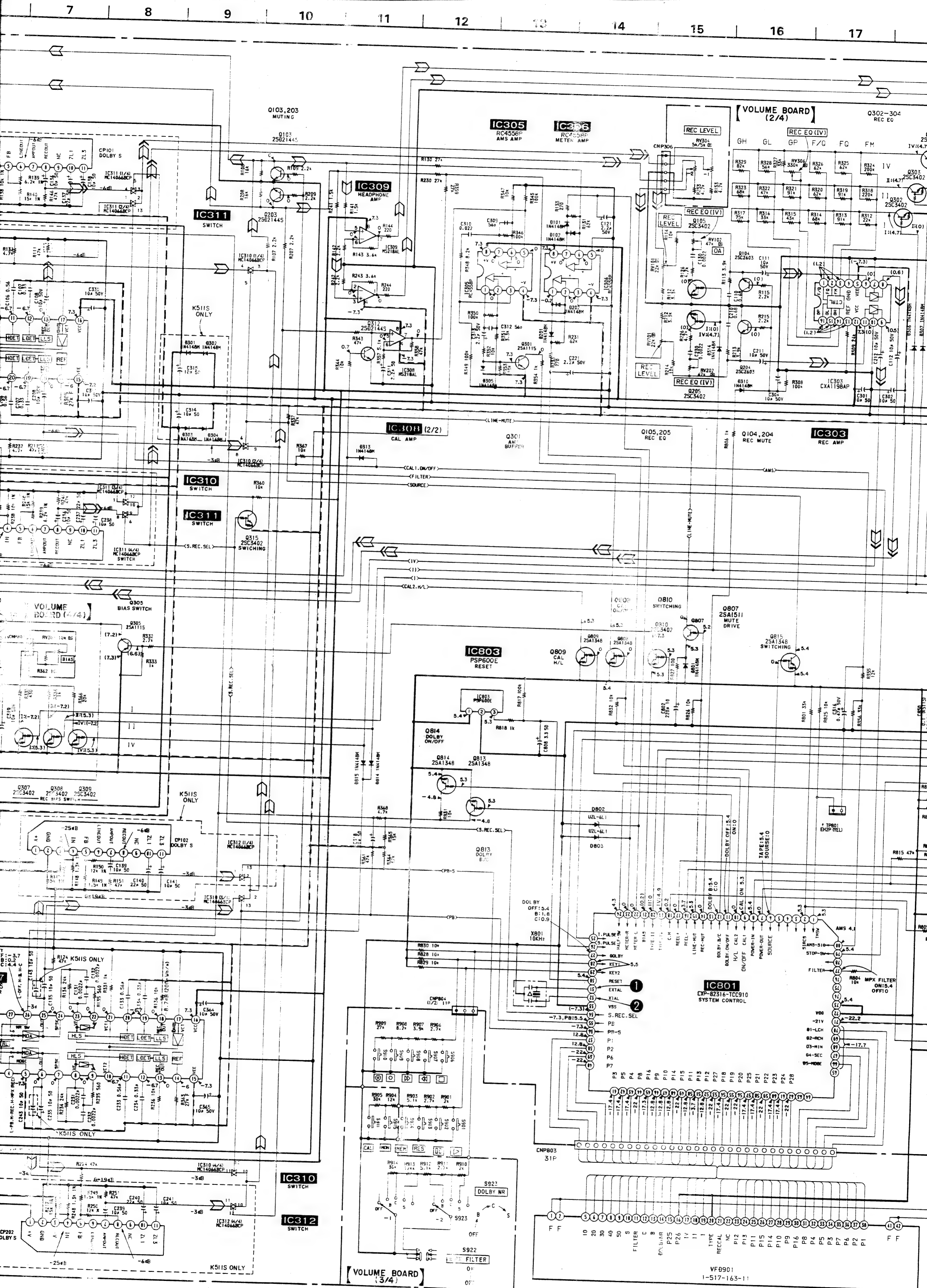
Note :

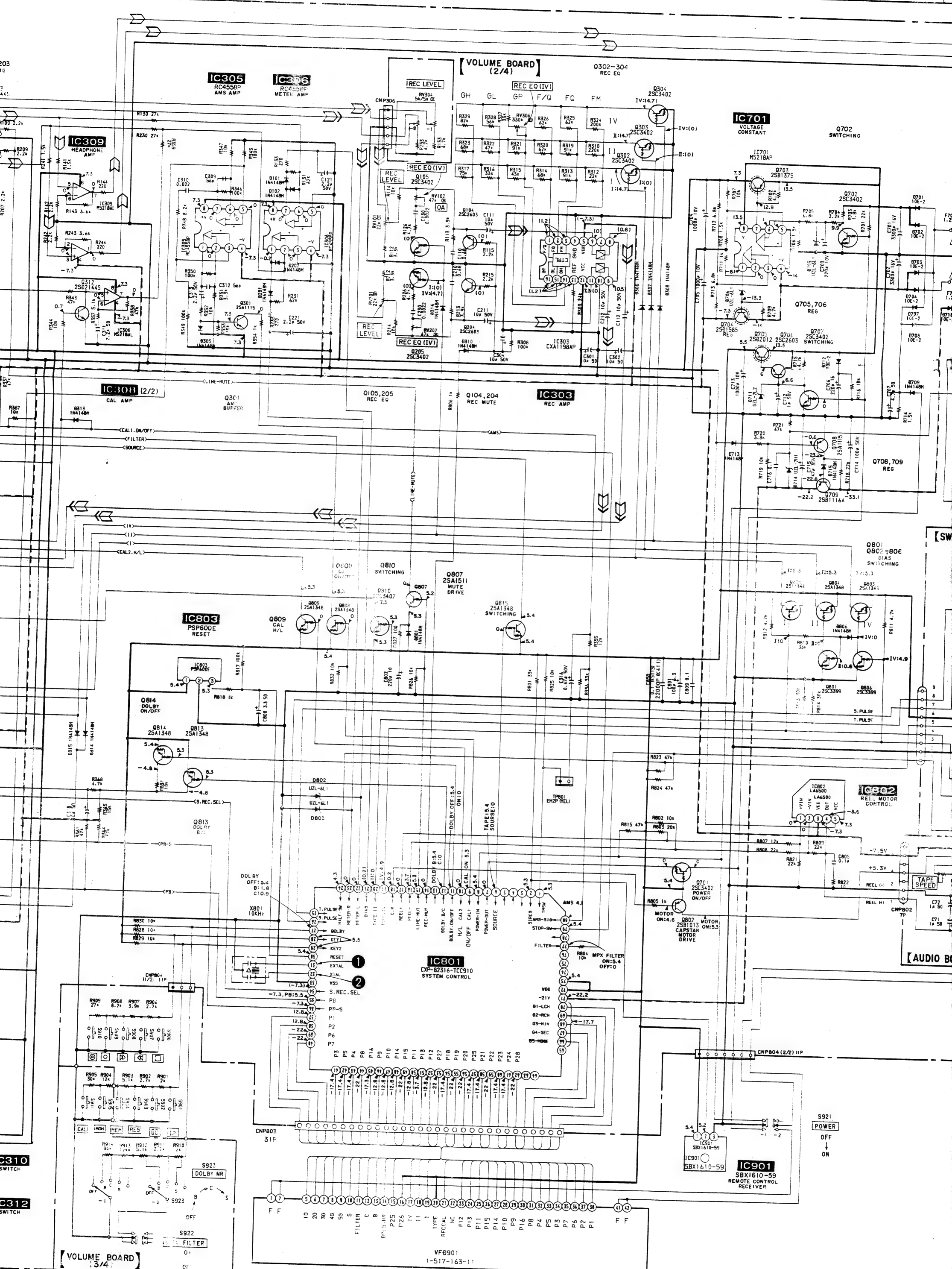
- All capacitors are in μF unless otherwise noted, pF: μF 50V or less are not indicated except for electrolytic and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- --- : fusible resistor.

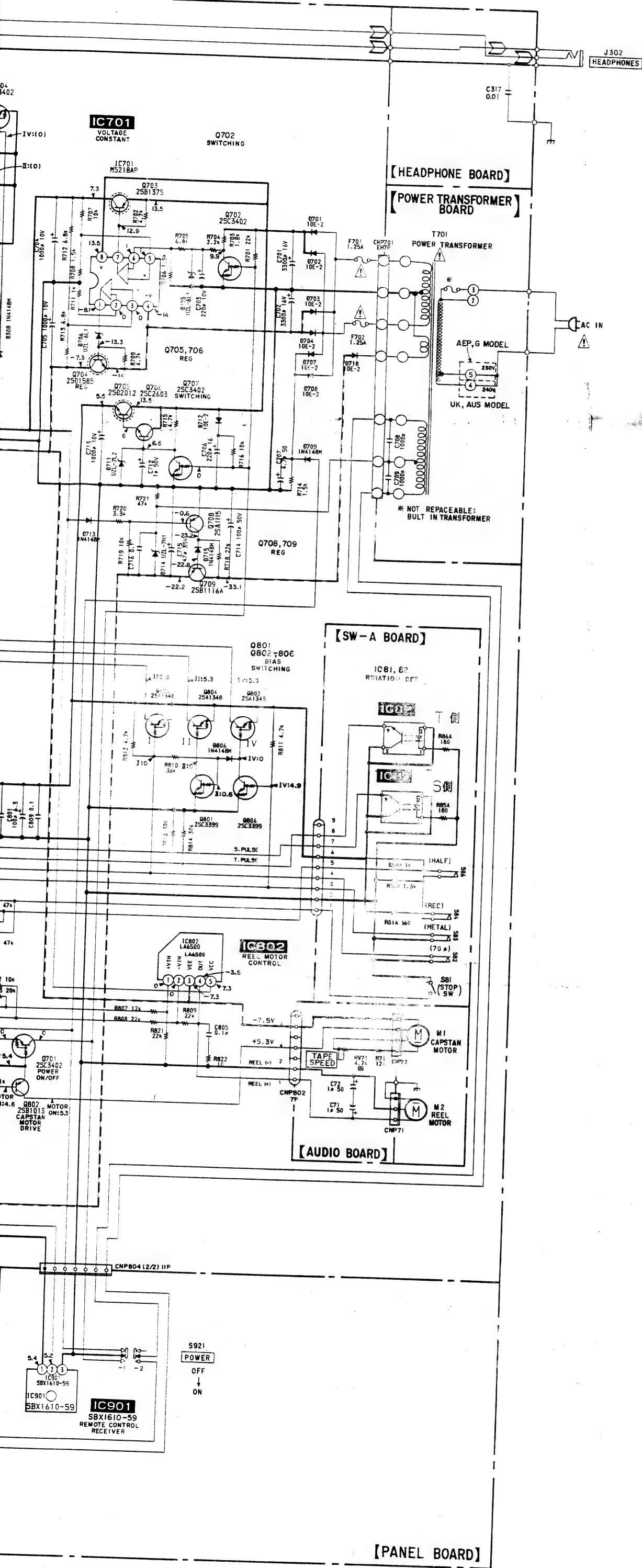
Note : The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- --- : B+ Line
- --- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : STOP
- () : REC
- Voltages are taken with a VOM (Input impedance $10M\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- --- : PB
- --- : REC
- G : Germany
- AUS : Australian



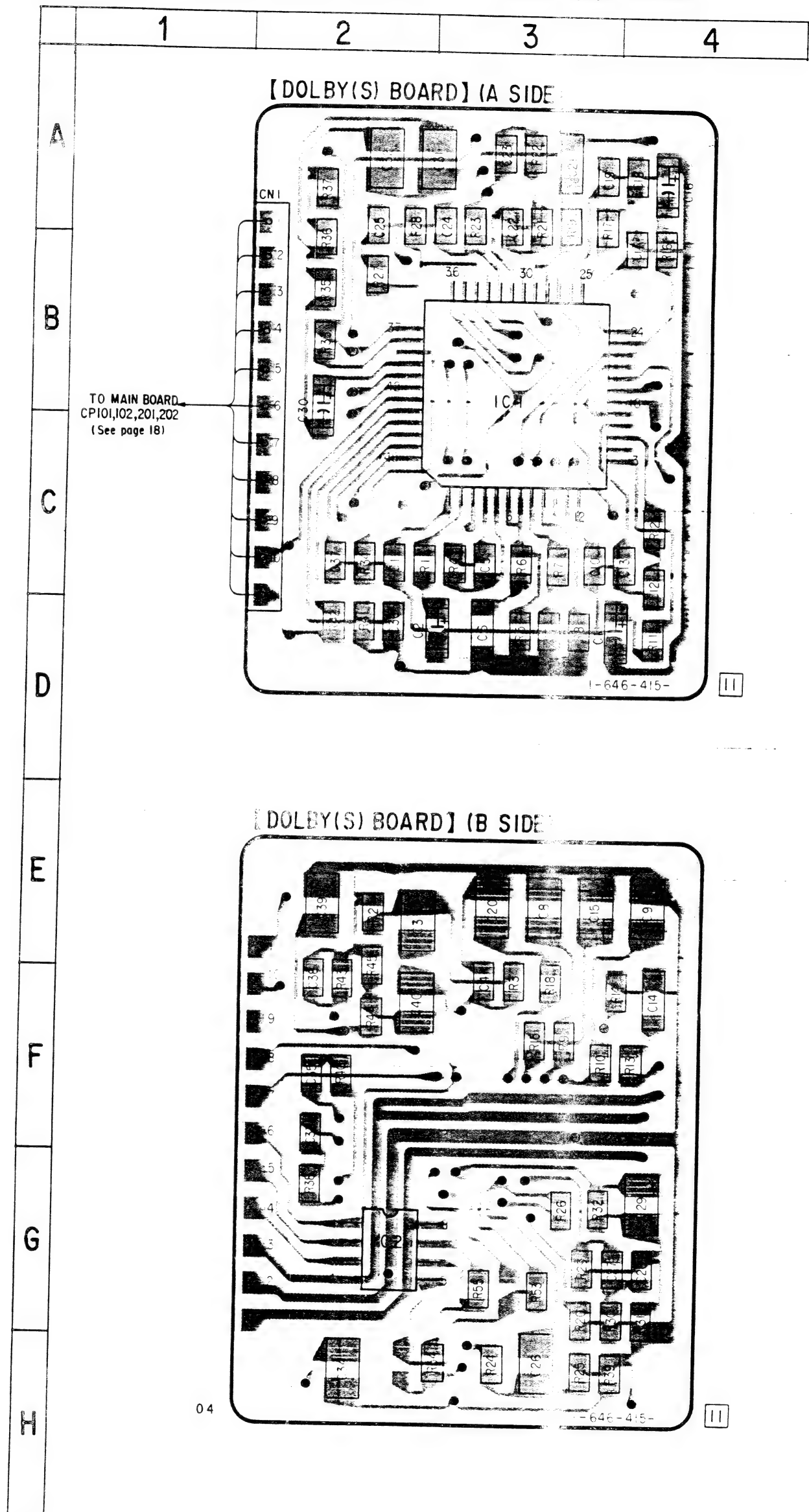






5-4. PRINTED WIRING BOARDS (DOLBY (S) BOARD)

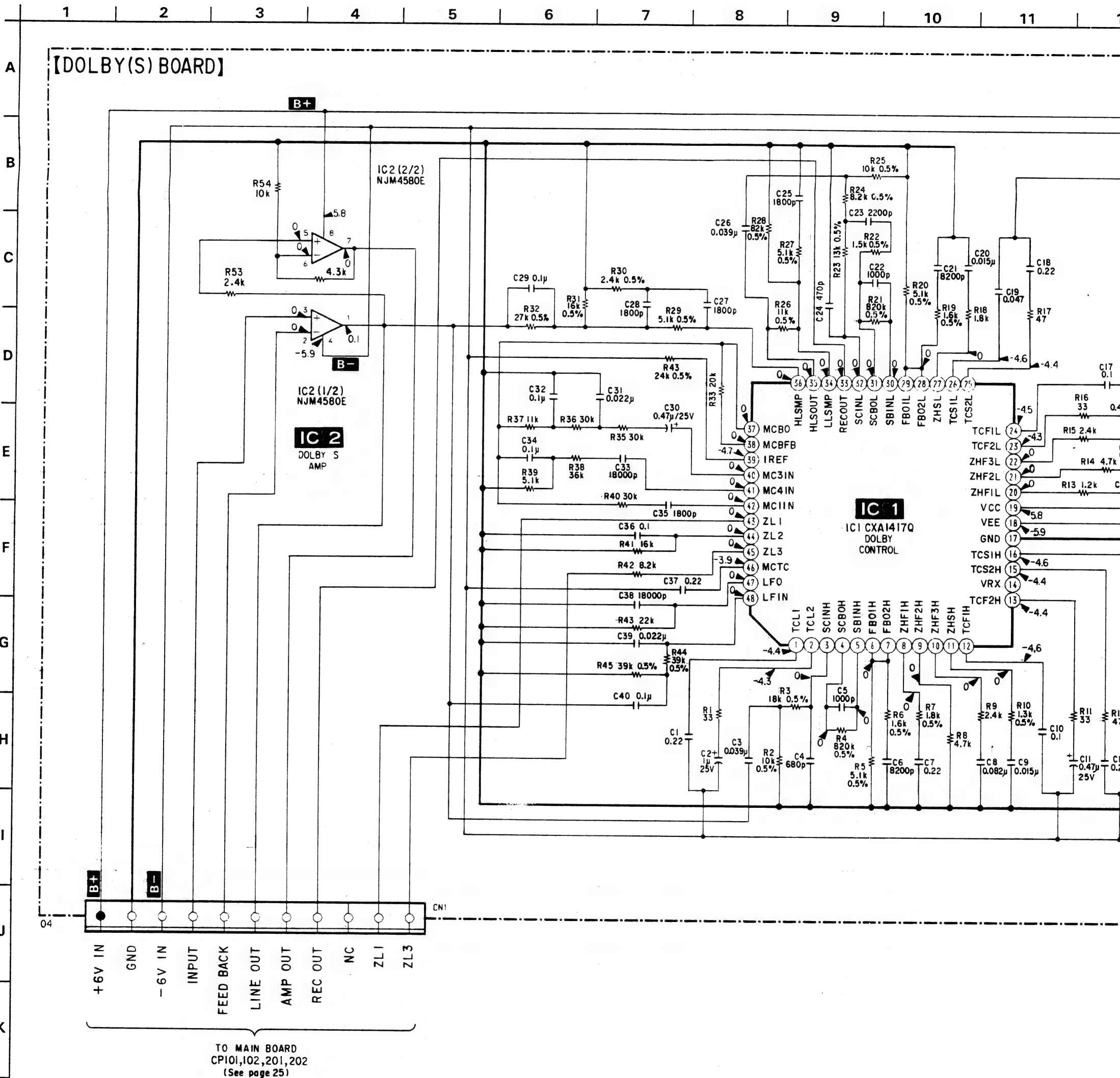
• Refer to page 15 for Note.

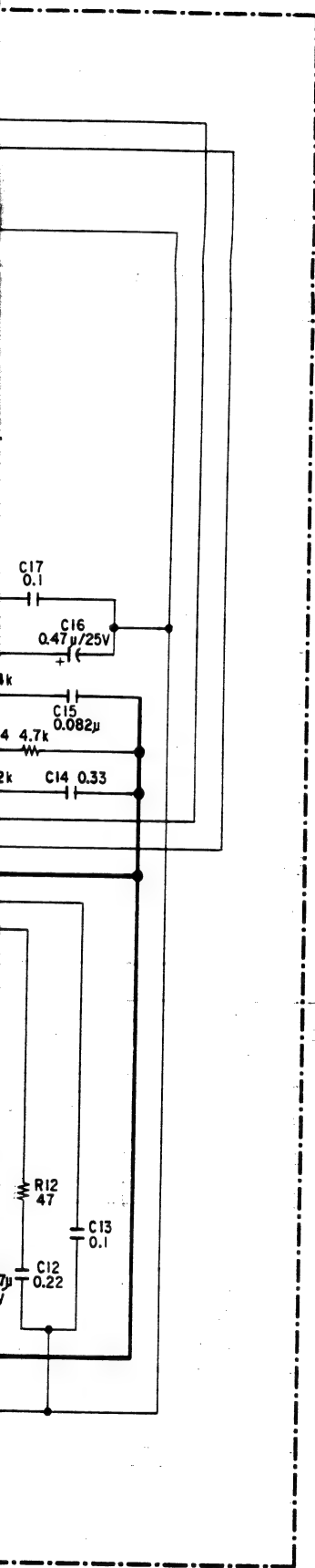


5-5.

5-5. SCHEMATIC DIAGRAM (DOLBY (S) BOARD)

• Refer to page 19 for Note.





SECTION 6 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE)....(RED)

Parts color Cabinet's color

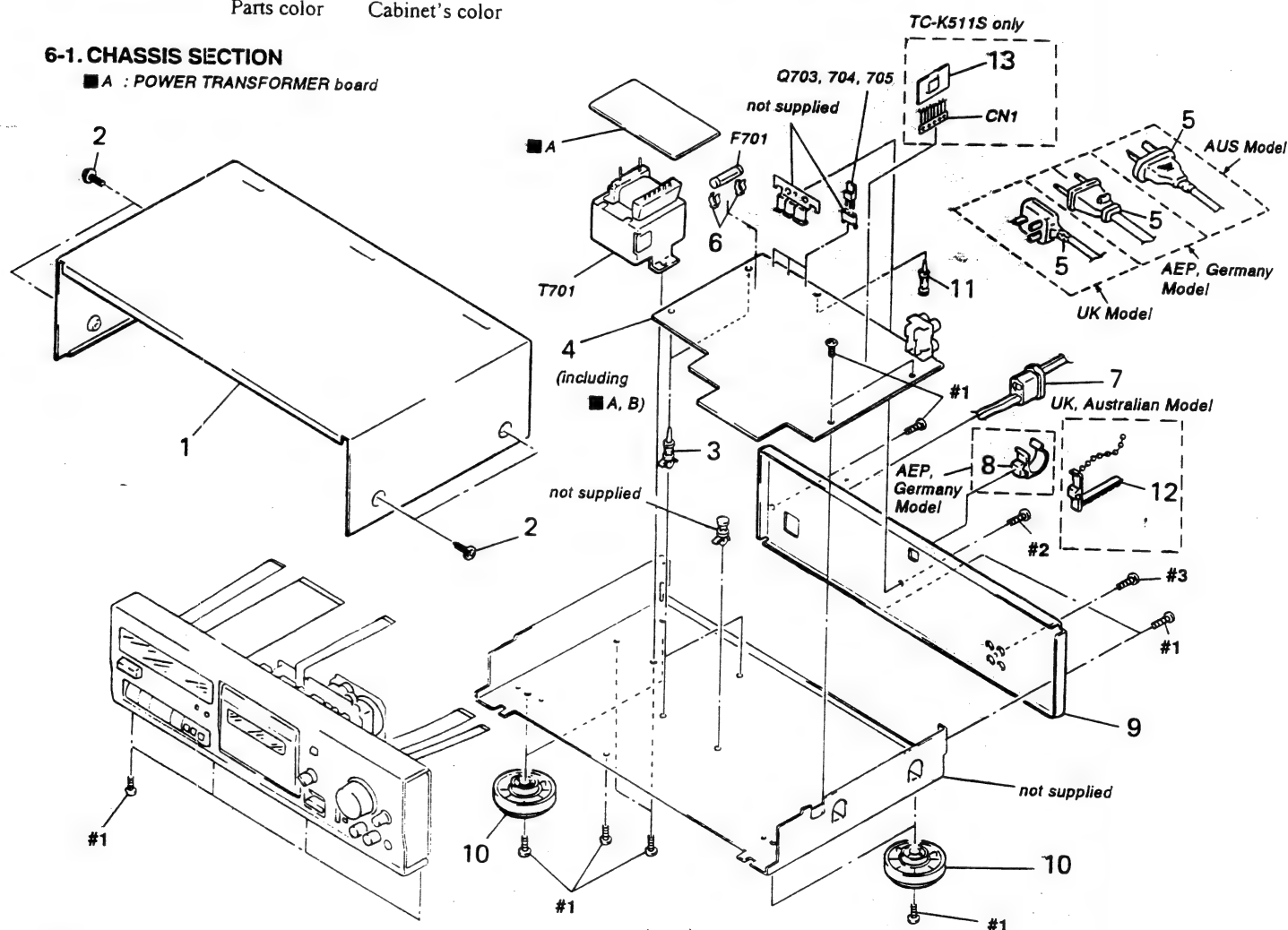
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

• AUS : Australian

6-1. CHASSIS SECTION

■ A : POWER TRANSFORMER board



| Ref. No. | Part No. | Description | Remark |
|------------|--------------|----------------------------------|--------|
| 1 | 3-332-578-61 | CASE | |
| 2 | 3-704-366-01 | SCREW (CASE) (M3X8) | |
| * 3 | 3-346-265-11 | HOLDER, PC BOARD | |
| * 4 | A-2007-008-A | MAIN BOARD, COMPLETE (K411) | |
| * 4 | A-2007-009-A | MAIN BOARD, COMPLETE (K511S) | |
| Δ 5 | 1-575-651-21 | CORD, POWER (AEP, Germany) | |
| Δ 5 | 1-696-586-11 | CORD, POWER (UK) | |
| Δ 5 | 1-696-845-11 | CORD, POWER (AUS) | |
| * 6 | 1-533-213-31 | HOLDER, FUSE | |
| * 7 | 3-703-244-00 | BUSHING (2104), CORD | |
| * 8 | 4-949-235-01 | HOOK (AEP, Germany) | |
| * 9 | 3-387-832-01 | PANEL, BACK (K511S:UK, AUS) | |
| * 9 | 3-387-332-11 | PANEL, BACK (K511S:AEP, Germany) | |

| Ref. No. | Part No. | Description | Remark |
|---------------|--------------|----------------------------------|--------|
| * 9 | 3-387-835-01 | PANEL, BACK (K411:UK, AUS) | |
| * 9 | 3-387-835-11 | PANEL, BACK (K411:AEP, Germany) | |
| 10 | 4-956-885-11 | FOOT (F58175S2W) | |
| * 11 | 3-669-610-00 | SPACER | |
| 12 | 4-956-370-02 | BAND, PLUG FIXED (US, AUS) | |
| * 13 | A-2006-954-A | DOLBY(S) BOARD, COMPLETE (K511S) | |
| * CN1 | 1-537-473-11 | TERMINAL (LEAD PIN) (K511S) | |
| Δ F701 | 1-532-285-00 | FUSE, TIME-LAG (1.25A) | |
| Δ F702 | 1-532-285-00 | FUSE, TIME-LAG (1.25A) | |
| Q703 | 8-729-141-83 | TRANSISTOR 2SB1094-LK | |
| Q704 | 8-729-141-89 | TRANSISTOR 2SD1585-K | |
| Q705 | 8-729-209-15 | TRANSISTOR 2SD2012 | |
| Δ T701 | 1-423-613-11 | TRANSFORMER, POWER | |

SW-A

| Ref.No. | Part No. | Description | Remark |
|------------|--------------|----------------------------------|--------|
| < SWITCH > | | | |
| S81 | 1-571-958-11 | SWITCH, PUSH (1 KEY) (STOP SW) | |
| S82 | 1-571-281-21 | SWITCH, LEAF (CrO ₂) | |
| S83 | 1-571-281-21 | SWITCH, LEAF (METAL) | |
| S84 | 1-571-281-21 | SWITCH, LEAF (REC) | |
| S86 | 1-571-281-21 | SWITCH, LEAF (HALF) | |

MISCELLANEOUS

| | | | |
|--------|--------------|----------------------------------|--|
| △5 | 1-575-651-21 | CORD, POWER (AEP, Germany) | |
| △5 | 1-696-586-11 | CORD, POWER (UK) | |
| △5 | 1-696-845-11 | CORD, POWER (AUS) | |
| 64 | 1-751-097-11 | WIRE (FLAT TYPE) (11 CORE) | |
| 65 | 1-751-096-11 | WIRE (FLAT TYPE) (31 CORE) | |
| 71 | 1-575-781-11 | WIRE, FLAT TYPE (9 CORE) | |
| 72 | 1-575-780-11 | WIRE, FLAT TYPE (7 CORE) | |
| 77 | 1-575-778-11 | WIRE, FLAT TYPE (5 CORE) | |
| 78 | 1-751-098-11 | WIRE (FLAT TYPE) (5 CORE) | |
| 120 | 1-638-983-11 | PC BOARD, MOTOR FLEXIBLE | |
| △F701 | 1-532-285-00 | FUSE, TIME-LAG | |
| △F702 | 1-532-285-00 | FUSE, TIME-LAG | |
| HE101 | 1-543-673-11 | HEAD, MAGNETIC (ERASE) | |
| HRP101 | 1-543-733-11 | HEAD, MAGNETIC (RECORD/PLAYBACK) | |
| M1 | X-3363-501-1 | MOTOR ASSY, REEL | |
| M2 | X-3365-377-1 | MOTOR ASSY, CAPSTAN | |
| Q703 | 8-729-141-83 | TRANSISTOR 2SB1094-LK | |
| Q704 | 8-729-141-89 | TRANSISTOR 2SD1585-K | |
| Q705 | 8-729-209-15 | TRANSISTOR 2SD2012 | |
| △T701 | 1-423-613-11 | TRANSFORMER, POWER | |

ACCESSORIES & PACKING MATERIALS

| | | | |
|---|--------------|--|--|
| | 1-558-271-11 | CORD, CONNECTION | |
| | 1-558-271-11 | CORD, CONNECTION | |
| | 1-696-170-11 | CORD, CONNECTION | |
| * | 3-350-830-01 | CUSHION | |
| * | 3-388-323-51 | INDIVIDUAL CARTON (K511S) | |
| | 3-388-323-61 | INDIVIDUAL CARTON (K411) | |
| | 3-756-691-11 | MANUAL, INSTRUCTION (AEP) (ENGLISH/FRENCH/SPANISH/PORTUGUESE) | |
| | 3-756-691-41 | MANUAL, INSTRUCTION (AEP) (GERMAN/DUTCH/SWEDISH/ITALIAN) | |
| | 3-756-691-51 | MANUAL, INSTRUCTION (GERMAN) (Germany) | |
| | 3-756-691-61 | MANUAL, INSTRUCTION (ENGLISH) (US, AUS) | |
| | 3-756-691-71 | MANUAL, INSTRUCTION (DANISH/FINNISH) (AEP) | |

| Ref.No. | Part No. | Description | Remark |
|---------------------------------|--------------|-------------------------|--------|
| ***** HARDWARE LIST ***** | | | |
| #1 | 7-682-548-09 | SCREW +BVTT 3X8 (S) | |
| #2 | 7-682-547-09 | SCREW +BVTT 3X6 (S) | |
| #3 | 7-621-849-00 | SCREW (BV/RING) | |
| #4 | 7-621-773-95 | SCREW -BVTT 2.6X6 (S) | |
| #5 | 7-685-134-19 | SCREW (- PTPWH) (2.6X8) | |
| #6 | 7-621-775-00 | SCREW +B 2.6X3 | |
| #7 | 7-627-556-08 | SCREW +P 2.6X2.8 | |
| #8 | 7-621-772-10 | SCREW +B 2X4 | |

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

246

TC-K411

SONY SERVICE MANUAL

6790
AEP Model
UK Model
Australian Model

SUPPLEMENT-1

File this Supplement with the Service Manual.

Subject : Correction
: Block Diagram

CORRECTION

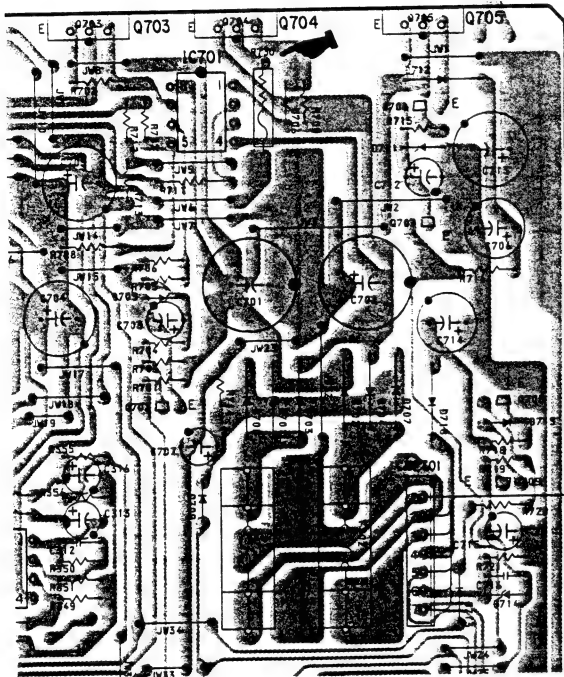
Correct your service manual as shown below.

: indicates corrected portion.

SECTION 5 DIAGRAMS

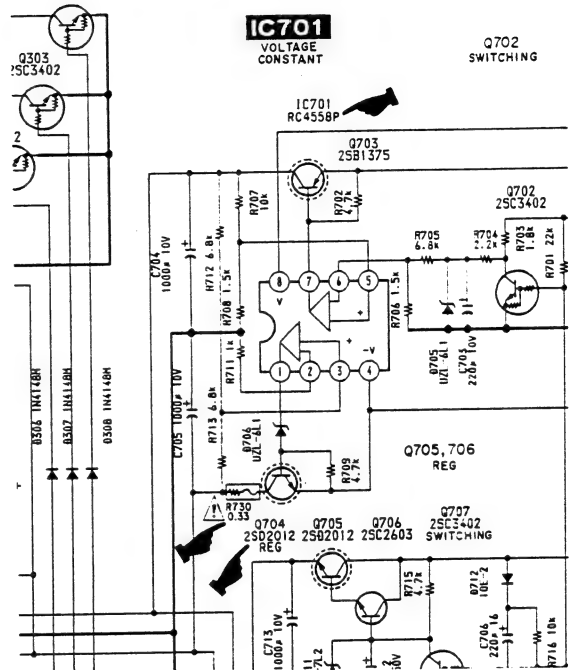
5-2. PRINTED WIRING BOARD (MAIN SECTION)

Page 17, Address B-16



5-3. SCHEMATIC DIAGRAM (MAIN SECTION)

Page 22, Address D-19




SECTION 7 ELECTRICAL PARTS LIST

| Page | INCORRECT | | | | CORRECT | | | |
|------|-----------|--------------|---|--------|---------------|--------------|---|--------|
| | Ref. No. | Part No. | Description | Remark | Ref. No. | Part No. | Description | Remark |
| 36 | IC701 | 8-759-634-51 | IC M5218AP | | IC701 | 8-759-145-58 | IC μ PC4558C | |
| 37 | Q704 | 8-729-141-89 | IC TRANSISTOR 2SD1585-K | | Q704 | 8-729-209-15 | IC TRANSISTOR 2SD2012 | |
| 39 | | | | | Δ R730 | 1-219-137-11 | FUSIBLE 0.33 10% 1/4W F | |
| 41 | | 3-756-691-61 | MANUAL, INSTRUCTION (ENGLISH) (US, AUS) | | | 3-756-691-61 | MANUAL, INSTRUCTION (ENGLISH) (UK, AUS) | |

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

CORRECTION

Correct your service manual as shown below.

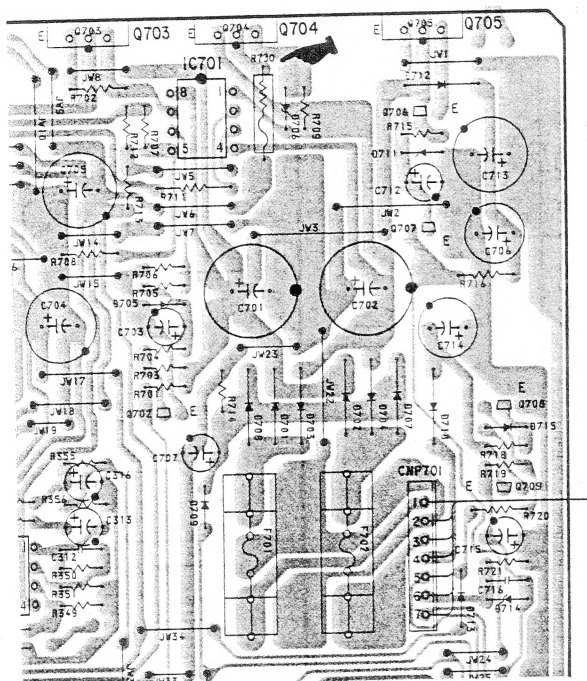
 : indicates corrected portion.

SECTION 5 DIAGRAMS

5-2. PRINTED WIRING BOARD

(MAIN SECTION)

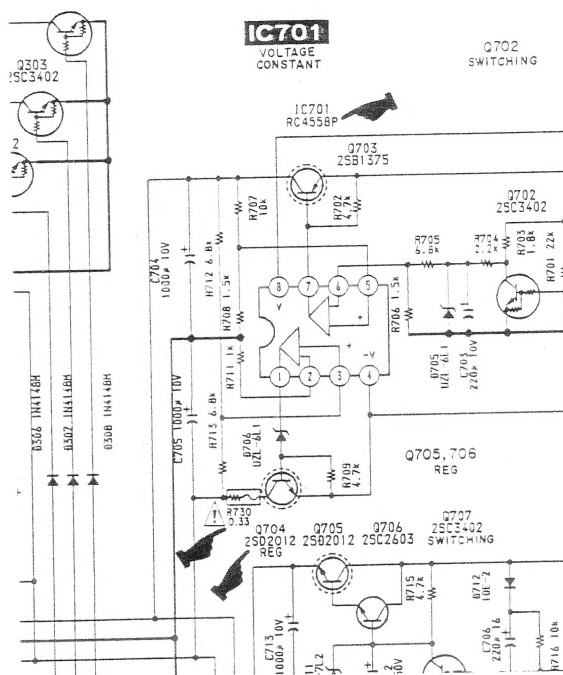
Page 17. Address B-16



5-3. SCHEMATIC DIAGRAM

(MAIN SECTION)

Page 22. Address D-19



SECTION 7 ELECTRICAL PARTS LIST

| Page | INCORRECT | | | | | CORRECT | | | | |
|------|-----------|--------------|---|--------|--|---------------|--------------|---|--------|--|
| | Ref. No. | Part No. | Description | Remark | | Ref. No. | Part No. | Description | Remark | |
| 36 | IC701 | 8-759-634-51 | IC M5218AP | | | IC701 | 8-759-145-58 | IC μ PC4558C | | |
| 37 | Q704 | 8-729-141-89 | IC TRANSISTOR 2SD1585-K | | | Q704 | 8-729-209-15 | IC TRANSISTOR 2SD2012 | | |
| 39 | | | | | | Δ R730 | 1-219-137-11 | FUSIBLE 0.33 10% 1/4W F | | |
| 41 | | 3-756-691-61 | MANUAL, INSTRUCTION (ENGLISH) (US, AUS) | | | | 3-756-691-61 | MANUAL, INSTRUCTION (ENGLISH) (UK, AUS) | | |

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

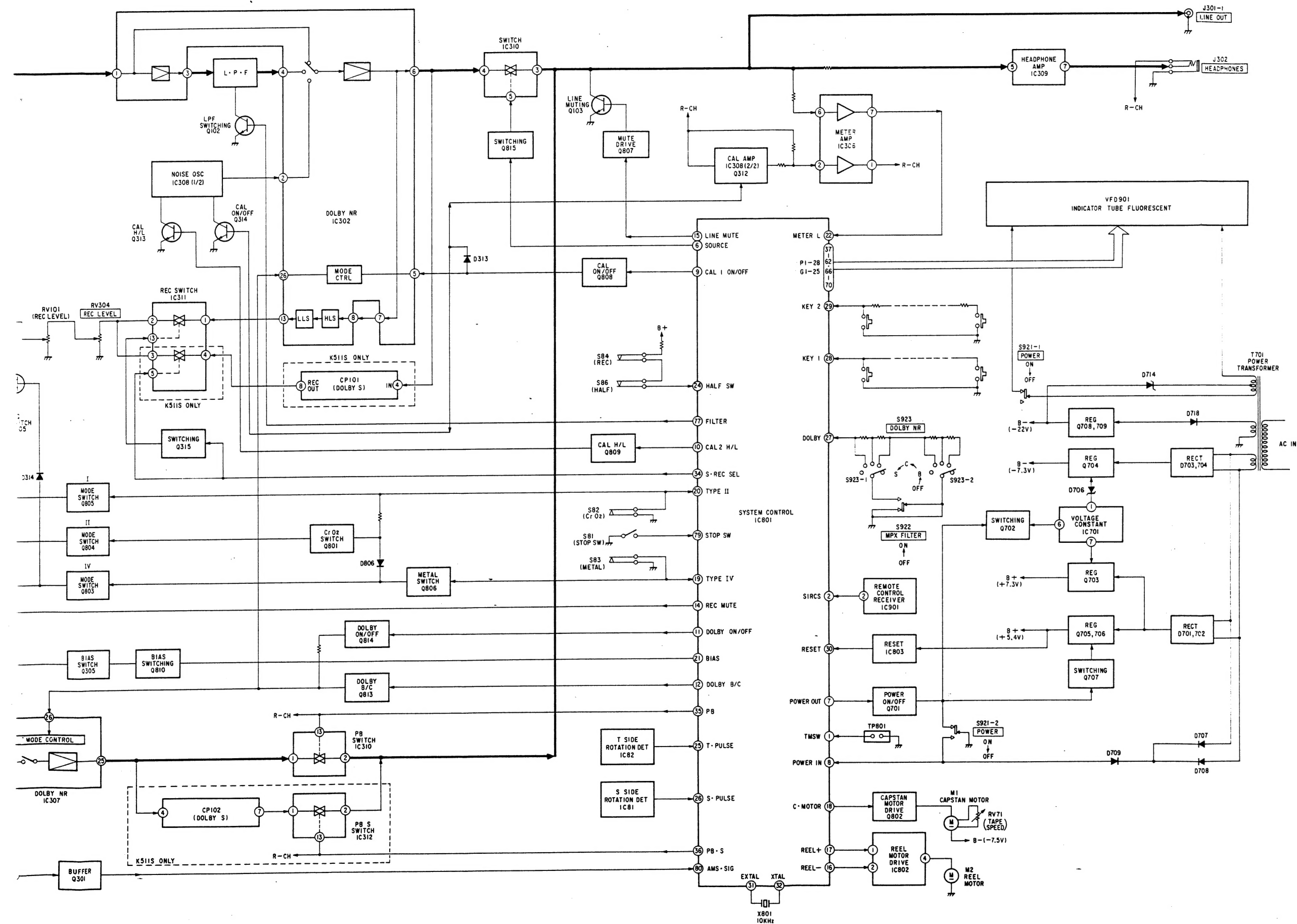
Block Diagram

This diagram illustrates the internal circuitry of a stereo receiver, showing the signal path from input to output, including various control and switching components.

Key Components and Sections:

- Input Section:** Includes LINE IN (J301-1), REC HEAD (HRP101-1), and PB HEAD (HRP101-2).
- Control and Switching Section:** Features a central control area with various switches (e.g., EQ SWITCH Q302, REC SWITCH IC311, MODE SWITCH Q803, Q804, Q805, Q806, Q807, Q808, Q809, Q810, Q811, Q812, Q813, Q814, Q815, Q816, Q817, Q818, Q819, Q820, Q821, Q822, Q823, Q824, Q825, Q826, Q827, Q828, Q829, Q830, Q831, Q832, Q833, Q834, Q835, Q836, Q837, Q838, Q839, Q840, Q841, Q842, Q843, Q844, Q845, Q846, Q847, Q848, Q849, Q850, Q851, Q852, Q853, Q854, Q855, Q856, Q857, Q858, Q859, Q860, Q861, Q862, Q863, Q864, Q865, Q866, Q867, Q868, Q869, Q870, Q871, Q872, Q873, Q874, Q875, Q876, Q877, Q878, Q879, Q880, Q881, Q882, Q883, Q884, Q885, Q886, Q887, Q888, Q889, Q890, Q891, Q892, Q893, Q894, Q895, Q896, Q897, Q898, Q899, Q900, Q901, Q902, Q903, Q904, Q905, Q906, Q907, Q908, Q909, Q910, Q911, Q912, Q913, Q914, Q915, Q916, Q917, Q918, Q919, Q920, Q921, Q922, Q923, Q924, Q925, Q926, Q927, Q928, Q929, Q930, Q931, Q932, Q933, Q934, Q935, Q936, Q937, Q938, Q939, Q940, Q941, Q942, Q943, Q944, Q945, Q946, Q947, Q948, Q949, Q950, Q951, Q952, Q953, Q954, Q955, Q956, Q957, Q958, Q959, Q960, Q961, Q962, Q963, Q964, Q965, Q966, Q967, Q968, Q969, Q970, Q971, Q972, Q973, Q974, Q975, Q976, Q977, Q978, Q979, Q980, Q981, Q982, Q983, Q984, Q985, Q986, Q987, Q988, Q989, Q990, Q991, Q992, Q993, Q994, Q995, Q996, Q997, Q998, Q999, Q1000, Q1001, Q1002, Q1003, Q1004, Q1005, Q1006, Q1007, Q1008, Q1009, Q1010, Q1011, Q1012, Q1013, Q1014, Q1015, Q1016, Q1017, Q1018, Q1019, Q1020, Q1021, Q1022, Q1023, Q1024, Q1025, Q1026, Q1027, Q1028, Q1029, Q1030, Q1031, Q1032, Q1033, Q1034, Q1035, Q1036, Q1037, Q1038, Q1039, Q1040, Q1041, Q1042, Q1043, Q1044, Q1045, Q1046, Q1047, Q1048, Q1049, Q1050, Q1051, Q1052, Q1053, Q1054, Q1055, Q1056, Q1057, Q1058, Q1059, Q1060, Q1061, Q1062, Q1063, Q1064, Q1065, Q1066, Q1067, Q1068, Q1069, Q1070, Q1071, Q1072, Q1073, Q1074, Q1075, Q1076, Q1077, Q1078, Q1079, Q1080, Q1081, Q1082, Q1083, Q1084, Q1085, Q1086, Q1087, Q1088, Q1089, Q1090, Q1091, Q1092, Q1093, Q1094, Q1095, Q1096, Q1097, Q1098, Q1099, Q1100, Q1101, Q1102, Q1103, Q1104, Q1105, Q1106, Q1107, Q1108, Q1109, Q1110, Q1111, Q1112, Q1113, Q1114, Q1115, Q1116, Q1117, Q1118, Q1119, Q1120, Q1121, Q1122, Q1123, Q1124, Q1125, Q1126, Q1127, Q1128, Q1129, Q1130, Q1131, Q1132, Q1133, Q1134, Q1135, Q1136, Q1137, Q1138, Q1139, Q1140, Q1141, Q1142, Q1143, Q1144, Q1145, Q1146, Q1147, Q1148, Q1149, Q1150, Q1151, Q1152, Q1153, Q1154, Q1155, Q1156, Q1157, Q1158, Q1159, Q1160, Q1161, Q1162, Q1163, Q1164, Q1165, Q1166, Q1167, Q1168, Q1169, Q1170, Q1171, Q1172, Q1173, Q1174, Q1175, Q1176, Q1177, Q1178, Q1179, Q1180, Q1181, Q1182, Q1183, Q1184, Q1185, Q1186, Q1187, Q1188, Q1189, Q1190, Q1191, Q1192, Q1193, Q1194, Q1195, Q1196, Q1197, Q1198, Q1199, Q1200, Q1201, Q1202, Q1203, Q1204, Q1205, Q1206, Q1207, Q1208, Q1209, Q1210, Q1211, Q1212, Q1213, Q1214, Q1215, Q1216, Q1217, Q1218, Q1219, Q1220, Q1221, Q1222, Q1223, Q1224, Q1225, Q1226, Q1227, Q1228, Q1229, Q1230, Q1231, Q1232, Q1233, Q1234, Q1235, Q1236, Q1237, Q1238, Q1239, Q1240, Q1241, Q1242, Q1243, Q1244, Q1245, Q1246, Q1247, Q1248, Q1249, Q1250, Q1251, Q1252, Q1253, Q1254, Q1255, Q1256, Q1257, Q1258, Q1259, Q1260, Q1261, Q1262, Q1263, Q1264, Q1265, Q1266, Q1267, Q1268, Q1269, Q1270, Q1271, Q1272, Q1273, Q1274, Q1275, Q1276, Q1277, Q1278, Q1279, Q1280, Q1281, Q1282, Q1283, Q1284, Q1285, Q1286, Q1287, Q1288, Q1289, Q1290, Q1291, Q1292, Q1293, Q1294, Q1295, Q1296, Q1297, Q1298, Q1299, Q1300, Q1301, Q1302, Q1303, Q1304, Q1305, Q1306, Q1307, Q1308, Q1309, Q1310, Q1311, Q1312, Q1313, Q1314, Q1315, Q1316, Q1317, Q1318, Q1319, Q1320, Q1321, Q1322, Q1323, Q1324, Q1325, Q1326, Q1327, Q1328, Q1329, Q1330, Q1331, Q1332, Q1333, Q1334, Q1335, Q1336, Q1337, Q1338, Q1339, Q1340, Q1341, Q1342, Q1343, Q1344, Q1345, Q1346, Q1347, Q1348, Q1349, Q1350, Q1351, Q1352, Q1353, Q1354, Q1355, Q1356, Q1357, Q1358, Q1359, Q1360, Q1361, Q1362, Q1363, Q1364, Q1365, Q1366, Q1367, Q1368, Q1369, Q1370, Q1371, Q1372, Q1373, Q1374, Q1375, Q1376, Q1377, Q1378, Q1379, Q1380, Q1381, Q1382, Q1383, Q1384, Q1385, Q1386, Q1387, Q1388, Q1389, Q1390, Q1391, Q1392, Q1393, Q1394, Q1395, Q1396, Q1397, Q1398, Q1399, Q1400, Q1401, Q1402, Q1403, Q1404, Q1405, Q1406, Q1407, Q1408, Q1409, Q1410, Q1411, Q1412, Q1413, Q1414, Q1415, Q1416, Q1417, Q1418, Q1419, Q1420, Q1421, Q1422, Q1423, Q1424, Q1425, Q1426, Q1427, Q1428, Q1429, Q1430, Q1431, Q1432, Q1433, Q1434, Q1435, Q1436, Q1437, Q1438, Q1439, Q1440, Q1441, Q1442, Q1443, Q1444, Q1445, Q1446, Q1447, Q1448, Q1449, Q1450, Q1451, Q1452, Q1453, Q1454, Q1455, Q1456, Q1457, Q1458, Q1459, Q1460, Q1461, Q1462, Q1463, Q1464, Q1465, Q1466, Q1467, Q1468, Q1469, Q1470, Q1471, Q1472, Q1473, Q1474, Q1475, Q1476, Q1477, Q1478, Q1479, Q1480, Q1481, Q1482, Q1483, Q1484, Q1485, Q1486, Q1487, Q1488

TC-K411/K511S



TC-K415/K515S

SERVICE MANUAL

7248
AEP Model
UK Model
TC-K415/K515S

Australian Model
TC-K415

- TC-K415/K515S are almost same as the model TC-K411/K511S previously issued.
Therefore, Refer to the TC-K411/K511S service manual for the information not contained in this service manual. 6790

NOTE :

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Difference Parts

| | TC-K411/K511S | TC-K415/K515S |
|-------------------------------|---------------|---------------|
| Tape Transport Mechanism Type | TCM-190VB11 | TCM-190VB14 |

TC-K415/K515S

| Page | Ref.No | Part No. | Description | Page | Ref.No | Part No. | Description |
|------|--------|--------------|--|------|--------|--------------|---|
| 28 | * 4 | A-2007-009-A | MAIN BOARD, COMPLETE (K511S/K515S : AEP,G) | 29 | 68 | X-3368-119-1 | HOLDER (R) ASSY, CASSETTE (K515S) |
| | * 4 | A-2007-226-A | MAIN BOARD, COMPLETE (K511S/K515S : UK) | | | | |
| | * 4 | A-2007-122-A | MAIN BOARD, COMPLETE (K415) | 30 | 101 | 3-911-014-01 | SPRING, TORSION (K415/K515S) |
| | | | | | 114 | X-3368-368-1 | FLYWHEEL (FWD) ASSY (K415/K515S) |
| | | | | | M2 | X-3368-855-1 | MOTOR ASSY, CAPSTAN (K415/K515S) |
| | 9 | 3-901-525-01 | PANEL, BACK (K415 : UK) | 31 | 151 | X-3368-718-1 | CHASSIS (ONE) ASSY, MECHANICAL (K415/K515S) |
| | 9 | 3-901-525-11 | PANEL, BACK (K415 : AEP,G) | | | | |
| | 9 | 3-901-525-21 | PANEL, BACK (K415 : AUS) | | | | |
| | 9 | 3-911-452-01 | PANEL, BACK (K515S : UK) | | | | |
| | 9 | 3-911-452-11 | PANEL, BACK (K515S : AEP,G) | | | | |
| | * 13 | A-2006-954-A | DOLBY (S) BOARD, COMPLETE (K515S) | | | | |
| | * CN1 | 1-537-473-11 | TERMINAL (LEAD PIN)(K515S) | | | | |
| 29 | 56 | X-3367-875-1 | LID ASSY, CASSETTE (K415) | | | | |
| | 56 | X-3368-044-1 | LID ASSY, CASSETTE (K515S) | | | | |
| | 57 | X-3367-874-1 | PANEL ASSY, FRONT (K415) | | | | |
| | 57 | X-3368-045-1 | PANEL ASSY, FRONT (K515S) | | | | |
| | 63 | A-2007-010-A | PANEL BOARD, COMPLETE (K515S) | | | | |
| | 63 | A-2007-121-A | PANEL BOARD, COMPLETE (K415) | | | | |
| | 68 | A-2004-357-A | HOLDER (R) ASSY, CASSETTE (K415) | | | | |

[AUS : Australian model
G : German model]

ACCESSORIES & PACKING MATERIALS

| | |
|----------------|--|
| 3-758-600-11 | MANUAL, INSTRUCTION (K415/K515S : AEP) |
| | (ENGLISH,FRENCH,SPANISH,PORTUGUESE) |
| 3-758-600-41 | MANUAL, INSTRUCTION (K415/K515S : AEP) |
| | (GERMAN,DUTCH,SWEDISH,ITALIAN) |
| 3-758-600-51 | MANUAL, INSTRUCTION (K415/K515S : G) |
| | (GERMAN) |
| 3-758-600-61 | MANUAL, INSTRUCTION (K415/K515S : UK, AUS) |
| | (ENGLISH) |
| * 3-912-543-01 | INDIVIDUAL CARTON (K415 : AUS) |
| * 3-912-543-11 | INDIVIDUAL CARTON (K415 : AEP, UK, G) |
| * 3-913-835-11 | INDIVIDUAL CARTON (K515S) |

STEREO CASSETTE DECK
SONY®

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Consumer A&V Products Company
Home A&V Products Div.

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